THE NATIONAL INCOME
OF
BRITISH INDIA
1931-1932

BY

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FOREWORD

By Professor A. L. Bowley, C.B.E., F.B.A.

Since Dr. Rao begins his Introduction with a quotation from the Report which Mr. Robertson and myself submitted to the Government of India in 1934, it is suitable that I should write a few lines of appreciation of his work. In our Report we ventured to call attention to some defects, as they appeared to us, in the material and organization of Indian statistics. But defective statistics can lead to some positive results, if they are handled with intimate knowledge of their background and full understanding of their limitations. These conditions are satisfied by Dr. Rao, and he has made great, and not altogether unsuccessful, efforts to fill some of the more important deficiencies.

In statistics of National Income it is not possible in any country to say that the aggregate, under any definition, *is* so much, but only that it is *at least* so much, or that it *lies between* certain limits. This has been Dr. Rao's method. Thus the final statement in Chapter XIV may be written "the net income of British India is estimated to have been between Rs. 16,000 millions and Rs. 18,000 millions in the year 1931–32", though he appears to regard the lower figure as definitely an underestimate for reasons he gives immediately afterwards.

Such aggregates have their purpose and utility, but their meaning is a little nebulous, because in

fact a great part of the population of India is little concerned with a money economy, since it lives on local produce that never passes through a market. A comparison between such a total and that computed for an industrial and trading community may be misleading. A supplement to this study of money aggregates and averages is desirable, where the money is translated back into goods, and accounts are given of the physical consumption by families in different occupations and at different income levels. This is specially important, since there is a temptation to say that a year's earnings in India are no greater than a month's earnings in Great Britain, or that where an Englishman receives £1, an Indian receives 1 rupee — generalizations suggested by the detail as well as by the gross totals and averages. Such statements need interpretation by studies of the budgets of an English or American artisan, factory operative or agriculturist alongside those of Indians in similar occupations.

Perhaps Dr. Rao may undertake this task in a further book. Meanwhile we find here a mass of important detail treated with informed judgment, which will be the starting-point for future income studies. It may even be hoped that the strong light thrown on the imperfections of many of the fundamental statistics may encourage efforts towards their gradual improvement.

AUTHOR'S PREFACE

A PREFACE is perhaps not quite in order when the author has written an introduction to his book. The only reason for writing this Preface, however, is to link up this work with the author's other study into Indian Income, viz., the one for 1925–29.[1] The previous study was undertaken at the invitation of the Dadabhai Naoroji Memorial Prize Trustees and is based upon a study of published data, both official and non-official. During the course of his work on that subject, the author became convinced of the necessity for choosing a census year for the calculation of Indian Income and also of the need for supplementing official data with *ad hoc* inquiries and for stating the results with care and awareness of the margin of error; hence his choice of the subject of Indian Income during 1931–32 for his doctorate thesis, when the Garton Trust enabled him to get the necessary leisure for undertaking this research. The results of this research are embodied in the pages that follow.

It will be seen on a reading of these pages that we estimate the *per capita* income of British India in 1931–32 at Rs. 62; in our previous study referred to above, we have estimated the *per capita* annual income of British India at Rs. 76 for the quinquennium 1925–29. If we correct the figure for 1925–29 by the fall that took place in the level of wholesale prices (Calcutta Index) by 1931, it would

[1] Allen & Unwin, 1938.

come to Rs. 49 for 1931–32. It is not, however, proper to correct the entire figure of Indian Income for the quinquennium 1925–29 by the fall in the level of wholesale prices. It is well known that the wholesale index number in India is based largely on the prices of agricultural commodities, and agricultural prices fell much more than industrial prices and the prices of services. If due allowance is made for this factor, the figure for 1925–29 would be, in terms of the prices of 1931–32, Rs. 55. In other words, our later study gives a *per capita* income for British India that is 11 per cent higher than what our previous study would give us if corrected for price changes. The explanation for this discrepancy lies partly in the fact that the later study contains a more accurate enumeration of the miscellaneous items; partly, it is due to the estimates of non-agricultural income contained in this study being larger than the corresponding figures contained in the previous study. As the later calculations of India's industrial income are based on more comprehensive data than were available for the earlier study, it is our considered opinion that the later figures are more accurate. It follows that the figures contained in the author's study of Indian Income for 1925–29 contain an underestimate of India's non-agricultural income; the *per capita* income estimate of Rs. 76 arrived at in that study needs therefore to be raised to Rs. 84.

The study of the income of British India for 1931–32 which is undertaken in the following pages is for British India as a whole, including the province of Burma. In view of the separation of Burma, the Income of Burma for 1931–32 has been

separately calculated on the same methods as those employed for the whole of British India and the results are stated in Appendix K. It should now be a matter of easy calculation for the interested reader to ascertain the income of British India excluding Burma.

In conclusion the author must point out that his two studies of Indian Income are for different periods and are based on different methods applied to not altogether similar data ; and therein lies his defence for permitting the publication of both the works.

V. K. R. V. RAO

AHMEDABAD,
29th December 1938

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INTRODUCTION

"We have been invited to consider the materials available for estimating the national income and wealth of India. These materials are very defective. To put it briefly, the statistics even of crop production leave much to be desired, while statistical information about other important parts of agricultural income, such as the output of animal husbandry, are almost completely lacking, and statistics of industrial production are patchy in the extreme. Undeterred by these difficulties various writers have from time to time attempted to estimate the national income of India. We do not propose to comment on those estimates, since whatever their merits or demerits at the time they were made, in any case they are now out of date. Nor do we propose to make any guess of our own." — Bowley-Robertson Report.

It requires some courage to embark on an Investigation into Indian Income; and lest we be accused of lack of discretion, we set out three sound reasons which have impelled us in choosing this subject for our research.

First, whether it is possible to estimate, with any pretention to accuracy, the National Income of India or not, in fact there exist a number of estimates of Indian Income. There are no less than eleven estimates and the first of these dates back to 1876. Some of them are calculated for identical periods,

and are in violent contradiction to each other.[1] Political controversialists make frequent play with the figures, while the public is almost visibly impressed by this neat translation of its entire economic condition into simple and easily remembered numerals. There is a magic about the *per capita* National Income which cuts across even the illiteracy of the Indian people to appeal to their imagination. In fact, the figure of India's *per capita* income has actually formed the subject of a Viceregal pronouncement.[2] Under the circumstances, it appears reasonable to attempt one more estimate of the National Income of India, if it is possible to obtain a greater measure of accuracy (or a smaller measure of inaccuracy) in the figure. Even a greater awareness of the margin of error would be an adequate defence for a new estimate. Our contention is that the calculations which follow in subsequent chapters are both less inaccurate and

[1] Details are furnished below :

Author	Year when Attempt was made	Year for which Estimate is made	Estimates of *per capita* Income in Rs.	Territory Covered by Estimate
Dr. Dadabhai Naoroji	1876	1868	20	British India
Baring and Barbour	1882	1882	27	,,
Lord Curzon	1901	1897–98	30	,,
William Digby	1902	1899	18	,,
F. G. Atkinson	1902	1875	27·3	,,
,,	,,	1895	35·2	,,
Sir B. N. Sarma	1921	1911	50	,,
Findlay Shirras	1922	1921	107	,,
Shah and Khambhata	1924	1921	74	Whole of India
Wadia and Joshi	1925	1913–14	44·3	British India
Vakil and Muranjan	1926	1910–14	58·5	Whole of India

[2] Lord Curzon, in 1902, in an address to the Imperial Legislative Council.

more conscious of their failings than those of previous writers on the subject.

Second, it is often said that bad statistics are better than no statistics. We would prefer to say that some statistics are better than no statistics. In fact, if one were to wait for completely adequate official statistics before embarking upon tasks such as these, one would have to wait for ever. Governments in India, as elsewhere, do not plan their collection of statistics. Administrative exigencies are the main motive, though the occasional curiosity of an individual officer does enrich the material available for the student. It is mainly the efforts of interested outsiders — mostly students and sometimes rather courageous politicians — in collating, tabulating and analysing official data which lead to their subsequent enlargement.

Moreover, when non-official critics using available official data draw conclusions that are not very much to the liking of the Government or party in power, Government is often obliged to publish additional data with a view to question the validity of their critics' conclusions. Inadequacy of statistical data, then, should be a spur to its maximum utilization, and even a certain boldness of interpretation seems warranted, as the most effective way — failing seizure of power by economists and statisticians — of inducing Government to make good the deficiencies in official data. To avoid misunderstanding, however, we must state at once an important qualification to this statement. The investigator must be constantly aware of the limitations to his conclusion resulting from this inadequacy of data. This we shall constantly bear in mind

when conducting our own investigations. Under the circumstances, we claim that the admittedly inadequate nature of Indian statistics is really a justification rather than a deterrent for a careful study of Indian Income.

Third, in addition to using all possible data available on the subject, including village surveys, we have supplemented our material by the results of a number of *ad hoc* inquiries among which may be mentioned inquiries into the output of meat and milk, and the incomes of persons engaged in industry, service of local authorities, domestic service, etc. Our study of Indian Income is, therefore, based on a more adequate data than has been available for previous attempts and may thus claim a more legitimate title to existence.

Above all, the calculation of Indian Income has been a great adventure. Travelling, interviewing and writing letters in great number have offset the dreariness of arithmetical calculations and left the author happy at the conclusion of his investigation. We hope, however, that the results of our endeavour will be found to be of some use to brother economists who are interested in Indian conditions. We may even hope that our efforts and conclusions may induce Government to supplement official data, thereby making the path of future calculators of Indian Income smoother than it has been for us.

It is very pleasant to close this Introduction with acknowledgments. I must begin with the Garton Trustees, who by awarding me their Studentship in the Social Sciences for two years gave me the necessary leisure for carrying out this survey. To Mr. Colin Clark, who guided me during my two

years of research at Cambridge, my most cordial thanks are due. I must also thank Mr. D. H. Robertson and Mr. P. Sraffa for kindly looking through parts of my manuscript and making suggestions. I must also place on record my thanks to the Sir Dorab Tata Trust for their grant which enabled me to meet the heavy printing, posting and incidental expenses of my *ad hoc* inquiries. Finally, my thanks are due to the large number of officials and non-officials, without whose willing courtesy and co-operation this work would not have been possible. I am also grateful to the Editor of *The Economic Journal*, for permission to incorporate in this work an article by the author on "The Earnings of Workers in Large Industrial Establishments in British India". It is also necessary to add that this thesis embodies the main conclusions of an essay on the same subject which was awarded the Adam Smith Prize in Political Economy in January 1936 by the University of Cambridge.

I am indebted to my friend, Dr. P. M. Joshi, Librarian, University of Bombay, for compiling the index.

CHAPTER I

THE CONCEPT OF NATIONAL INCOME

THE idea behind computing the national dividend of a country is, in substance, very similar to that which is behind attempts to compute the individual's income. An individual's income is an index of his standard of life and the extent to which he is able to afford conveniences and luxuries. It also indicates his position *vis-à-vis* other individuals in the community. When matters of taxation or other compulsory burdens are in question, his income is relevant in determining their incidence. Finally, taken over a series of years, statistics of his income are significant of his progress in economic status.

Similarly the National Income of a country is indicative of the standard of life which it can support for its people. It is of use in instituting comparisons between the economic position of different countries. It is highly relevant in the realms of public finance and taxable capacity, while taken in sequence, it serves the useful purpose of ascertaining the trend — in point of both direction and magnitude — of the country's economic progress.

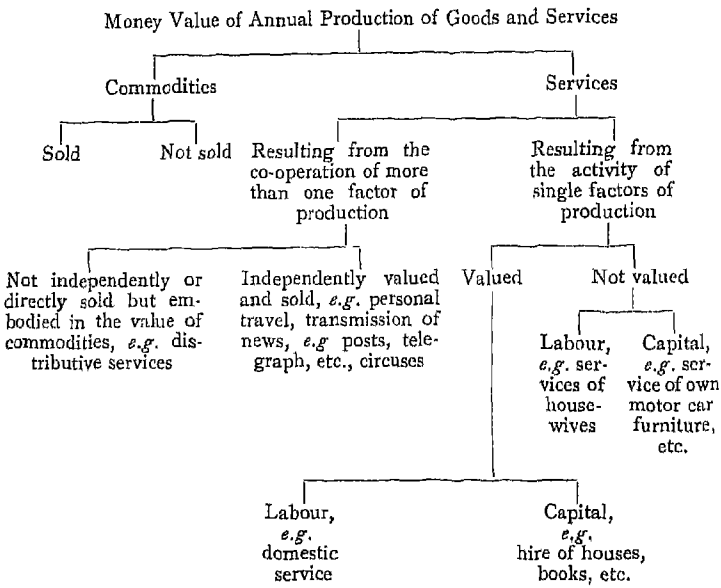
In order to get a clear idea of the concept of National Income, we have to consider the following questions :

1. Items to be taken into account, viz. : goods and services.

2. Procedure followed in totalling the different items.
3. Deductions necessary to arrive at net income.
4. Period for which calculations are made.
5. Availability of statistical data.

The following schematic representation of all the items that can possibly enter into gross National Income may prove of interest in discussing these questions:

NATIONAL INCOME



Even the above table is not quite exhaustive. There are, *e.g.*, a number of factors such as traditions of initiative and enterprise, self-government, an equable climate, a favourable geographical situation, harbours, rivers, mountains, scenery, historic relics, all of which add to the annual flow of utilities

to the country which possesses them, and not all of which are taken into account in calculating its National Income. It is true that some of these, like historical monuments or an enchanting natural scenery, lead to an inflow of tourists from abroad, and this enters into the country's money income; while others, such as harbours and rivers or traditions of initiative and enterprise may increase productive efficiency and find their utility incorporated in the resulting greater aggregate flow of commodities and services. But there remain some items, *e.g.* beautiful scenery, the aesthetic satisfaction of which to the people of the country (the corresponding satisfaction it affords foreigners may be related to the income from tourists) cannot be measured. Then again, political subjection involves a definite feeling of disutility which cannot be measured, and therefore cannot be set off against a perhaps larger aggregate of commodities that may result from an efficient foreign rule. In short, the utilities added by the nation's consumption capital are not taken into account in computing its income, except in so far as these items attract tourists to the country and thus result in an addition to the nation's income.

To return to our table. In classifying the items that make up National Income, it will be noticed that we distinguish between commodities and services. In fact, not everybody is agreed that services should be there at all. Sir J. C. (now Lord) Stamp points out in his Presidential Address to the centenary meeting of the Royal Statistical Society that Hungarian economists are generally of opinion that services ought not to be reckoned in National Income. A

similar opinion has been held by a number of investigators into Indian Income, notably Naoroji, William Digby, and Shah and Khambhata. Shah and Khambhata's is really the most elaborate of published works on Indian National Income; and as it also contains a lengthy defence of the omission of services in their calculations, it is worth while entering upon a brief examination of their arguments. Their main thesis may be restated by us in the following three propositions:

1. It is not logical to include some services such as those of lawyers, doctors, civil servants, etc., and exclude others such as those of wives, mothers, etc.
2. A number of services, *e.g.* that of private secretary or a housekeeper, are such that it is not clear how far they represent compulsory expenditure incurred in the course of business or free expenditure incurred in spending one's income. And clearly it is very difficult to estimate which part of the value of such services is a net addition to the income of the community.
3. Services result only in such utilities as advice, knowledge, guidance, pleasure, comfort, relief from pains, assistance, protection, encouragement, order, stability, organization, etc., which, being psychic, are non-measurable. A money expression of these efforts can only be made on the basis that equal efforts have equal money values. But there is no equal reward for equal efforts. There is no one rate for the same kind of service. It is, therefore, impossible to measure services in money. The conclusion

is that services should be excluded from the computation of National Income.[1]

We shall discuss the validity of those three arguments in the same serial order. It is true that no estimate of National Income includes the value of the services of wives and mothers. But there is a vital distinction between the services of a mother and those of a nurse. In so far as ' real cost ' has a psychological and not a physical basis, the nurse incurs a real cost in looking after a child, while the mother does not. In fact, the mother's service is rendered free ; the nurse will render hers only for a payment. In the one case, there is a *quid pro quo* ; in the other case, there is none. In as much as one of the essential attributes of wealth is scarcity or that it cannot be had for nothing, there appears to be a *prima facie* case for including the value of the services of nurses and not that of mothers in a computation of National Income. This need not prevent us, however, from readily admitting that services, whether paid or unpaid, contribute to the welfare of the community. And as ultimately what we are really interested in is welfare, it is necessary that there should be a broad functional relationship between money estimates of National Income, and national welfare. This is what makes it so important that before embarking upon an estimate of National

[1] We quote the exact wording. " There is not a shred of excuse to speak of the non-industrial services (*i.e.* the services which do not result in material production) as being measurable in money. They result only in such utilities as advice, knowledge, guidance, pleasure, comfort, relief from pains, assistance, protection, encouragement, order, stability, organization, etc., which being psychic, are non-measurable. These, therefore, though a species of income in the broad sense cannot enter into a computation of the national dividend." —*Wealth and Taxable Capacity of India*, p. 35.

Income, the investigator should define precisely what services he proposes to include. It is quite conceivable, that with the growth of civilization and the feminist movement, mothers might feel that their services must be paid for : likewise many other services which may at present be given free on grounds of affection, tradition, religion or similar non-economic considerations, may no longer be so given, and instead, sold for money. In such a case, money-estimates of National Income will show an increase without any real addition to economic welfare. It is therefore important, when comparing the estimates of National Income at different dates, to indicate how far the services, the value of which was not included in the one, have been included in the other. Similarly when using estimates of National Income for comparing the economic condition of two different countries, it is desirable to indicate what services have been excluded from the computations in both the cases. All this, however, is no case for excluding the value of all services from the National Income, though it does show the need for care and explicitness in dealing with them.

The second objection, viz. that it is very difficult to distinguish between services which are a part of the cost of production and those which are not, is an objection of detail. Taking the very example which they employ, viz. Marshall's celebrated landlord with his income of £10,000, the landlord's private secretary with an income of £500, and the private secretary's housekeeper with an income of £50, it is quite clear that the income of the community must include the £50 of the housekeeper. The really

difficult question arises when we come to decide whether the £10,000 of the landlord should be included entirely or a deduction allowed for the salary he pays his secretary. The answer turns upon not whether the landlord will have a private secretary at all if his income were less than £10,000, but upon whether, in the absence of a private secretary, his income in fact would be as much as £10,000. It is no good dismissing such considerations as 'very subtle, but useless in practice'; in fact, Income-Tax Commissioners deal with many such cases in practice with a reasonable degree of satisfactoriness. The point raised by Shah and Khambhata pertains therefore not so much to services as to the question of distinguishing net from gross income, which difficulty we shall deal with in a later paragraph.

The third objection, viz. that services cannot lend themselves to *money* measurement, as there is no equal reward for equal effort, is really an excursion into ethics which is difficult to understand in a computation of National Income. The distinguished authors would have been more logical if they had objected to all monetary measurements of value. But they say, "it is easily seen that commodities are measurable in money". If commodities are measurable in money, so are services. If "the prices paid for services depend entirely upon the means and whims of those that buy, and on the number and needs of those that sell them", so do those of commodities. If a rich man is prepared to pay a doctor a higher fee because he is rich and not because the doctor's service involves any greater effort, similarly the rich man is prepared to pay a higher price for a commodity better dressed up or

better displayed, because he is rich and not because the commodity has involved a correspondingly larger cost of production. The discriminating monopolist is to be found in both the purveyors of commodities and of services; only the discriminating monopolist in commodities has often to cover up his action in a cloak of apparent differences in quality. We conclude, then, that services ought properly to be taken into account, and that only those services which are exchanged for money or are normally so exchanged should be included in National Income.

This brings us on to the question of how the different items that make up the National Income should be totalled up. Obviously, the common measure is their money value, and it is the recognized measure. But we may briefly note here some of the limitations which are inherent in the money measure and which must be taken into account when using figures of National Income as an index of the nation's economic welfare. Firstly, in so far as the prices paid for different commodities and services are dependent upon the amount of the individual's income, every rupee of National Income does not indicate the same amount of satisfaction; and it would be a useful corrective if one could have a physical aggregate of commodities and services. Generally speaking, one can say that the larger the inequality of incomes, the smaller is the satisfaction which a given National Income gives to a community. Secondly, in a country like India, where there is a sharp line of demarcation between the rural and urban sections of the population, it must not be forgotten that a rural rupee (if one can use

such a phrase) has a different purchasing power and therefore yields a different measure of satisfaction from that given by an urban rupee. Thirdly, when instituting historical comparisons between estimates of National Income at two different dates, the difference in the purchasing power of the rupee has to be specifically allowed for. Fourthly, when comparing the economic condition of two different countries by reference to their National Incomes, it must not be forgotten that their exchange ratio is no adequate measure of the difference in their domestic price levels. Moreover, even in countries with a great deal in common, national standards of living differ, and the satisfaction obtained from the same bundle of commodities and services may not be, and are not usually the same in both the countries. Finally, the fact that National Incomes are stated in terms of money leads not only to the exclusion of services which are not usually exchanged, such as those of wives and mothers, but also to that of the flow of utilities from some durable consumption goods, such as motor cars and furniture, which are owned and not let out on hire by their owners. To this extent, the figure of the National Income becomes an inadequate measure of economic welfare; and in instituting historical or other comparisons, care must be taken to see that the excluded items remain the same in the different estimates. When all objections are outlined, it still remains true that there is a great deal of use in compiling figures of National Income.

We now turn to the third question, viz. the deductions necessary to arrive at net income. Theoretically, one can lay down the simple proposition

that all expenses which are incurred in the process of production, and the expenditure necessary to keep intact and unimpaired the existing capital equipment and stock of goods should be deducted from gross income. It is the second part of this proposition which gives rise to difficulties. Why should the allowance for repairs and depreciation be permitted only for capital equipment, and not for human labour? Should not expenditure on general education, technical education, hospitals, etc., be counted as a part of the cost of producing the National Income? The writer's own sympathies may lead him to answer this question in the affirmative, but he dare not contemplate the statistical results of applying such a concept, particularly for countries like his own where the average expectation of life is below 25. Moreover, all expenditure on oneself is consumption, and consumption is the goal of all production. Under the circumstances, we cannot make any allowance for depreciation or repairs on account of labour. Even as regards existing capital equipment and stock of goods, there is a certain amount of ambiguity in computing net income. Take, for example, capital equipment; should there be any allowance for obsolescence? Even income-tax authorities — the world's most doughty defenders of such definitions as would extend the scope of net income — would say 'yes'; but it is not clear whether new machinery which replaces old and obsolete machinery is really an addition to capital equipment or merely maintenance intact of existing equipment. Is not an improvement in existing equipment an addition to its efficiency: and should not the extra expenditure incurred in

adding new machinery be regarded as a part of the community's net income which it deliberately devotes to improving its capital equipment? Perhaps the answer would be different according as whether we are thinking of a capitalist society where, at least traditionally, obsolescence would be a compulsory charge upon the employer, or of a socialist society where it would be a deliberate charge undertaken by the community upon its net income. As regards depreciation, there is no one recognized method of calculating it, and not all owners of capital equipment employ experts to assess the annual depreciation of their property. Yet a definite cost is incurred and has to be met if the equipment is to be maintained indefinitely through time. The practical compromise is to accept what income-tax authorities recognize as legitimate depreciation, though this gives no absolute certainty that we are thereby dealing with true net income. Even repairs are not a clearly recognizable cost. In so far as repairs can be postponed or speeded up, the amount expended in a year is not identical with the cost incurred in that year. We shall deal with that point in the next paragraph. Finally, in an agricultural country like India, where land and livestock form such a large part of the wealth of the people, it is difficult to trace depreciation, let alone calculate it. In spite of all the considerations mentioned above, it is possible to arrive at a figure of net income which is approximately equal to the true net income of the community.

The last question, viz. the period for which calculations are made, also presents a number of difficulties. It is usual to compute the National

Income for a period of one year. In the actual calculation, there are certain minor difficulties caused by the fact that the statistics of production or income used do not all refer to the same period of twelve months; thus the agricultural year is different from the financial year, which in turn is different from the calendar year. In addition, there are one or two major difficulties of principle arising from the fact that we mean by income an income which is currently created. Repairs, postponed from the previous year, and therefore incurred during the current year, should properly be charged on the income of the previous year; similarly, repairs not incurred during the current year, though the need for them arises during the period, ought properly to be charged to the current year's income. In practice, of course, it is almost impossible to distinguish between current expenditure on repairs which is due to the use of the capital equipment during the current year, and that which is postponed from the previous year or years. And current expenditure on repairs is always debited to the current year's income. The other question relates to pensions. Pensions are a return for services rendered in the past, and high authorities hold that they ought not to be included in the current year's income; consistently with this attitude they would add in the salary bill for the current year the charge occurring during that year for the future pensions of these civil servants.[1] It is submitted, with great respect, that it is not so certain that pensions are given for services rendered in the past. The fact that pen-

[1] *Vide* Prof. Bowley, "The Definition of National Income", *Economic Journal*, 1922. Also cf. Bowley-Robertson Report, p. 11.

sions cease at the death of the recipient, even if he dies immediately on retirement, seems to indicate that the payment has some relation to the services which the pensioner renders to the community by way of his experience, mature judgement and expert knowledge, rather than to his past services. In fact, Governments themselves do not include in their current expenditure the money valuation of the pension rights that accrue during the year to their servants. Some additional support is lent to this view by the fact that where the employees get provident funds instead of pensions, the State sets apart a sum every year which counts as current expenditure, and the amount is handed over to the relatives of the civil servant, even if he dies before completing his full period of service. The only pensions which, on this view, should be excluded from current income would be pensions awarded to the relatives of Government servants, explicitly on the ground of previous service; an ideal example would be pensions for war widows. Excluding such pensions, it is our contention that all other pensions should be included in the current year's income.

The final question, that of data, is the most important of all. It is not necessary to observe that the availability of statistics, and that too in the proper form, is of fundamental importance in calculating the National Income; in fact the differences in the extent, reliability and form of the statistics of different countries are mainly responsible for the differing degrees of error in the estimates of the National Income of these countries. It is really too much to expect that all the statistics we require, and

in the form in which we will find them most useful, will be available, because, after all, Governments in most countries collect statistics in the course of their administration, and do not normally think of the statistician's needs. Particularly in the case of India, statistics of the right sort are scanty and the influence of this on our calculations is seen in the next chapter, where we discuss our method of approach. In spite of difficulties of data, however, we feel, as we have urged with perhaps undue force in our Introduction, that a useful purpose will be served by attempting an estimate of India's National Income.

We can now sum up our observations on the limitations of an estimate of National Income. Before one can use the figure of National Income as index of the standard of life which the people of the country can afford to lead, we must know, for example, how far the economy of the country is monetary, and how far the country enjoys resources of utility which are not capable of monetary valuation. We must also, of course, have regard to the distribution of the national dividend and the age composition of the population. Then again, before instituting comparisons between different countries regarding their economic position on the basis of such statistics, we must know the extent to which the economy is monetary in both the countries, also the preference of the people for articles of food, drink, toilet, etc., also the level of prices of their domestic commodities, the state of taxation and other relevant features in national economy. Similar considerations have to be taken into account when we seek to use these statistics for purposes of deciding taxable capacity

— which is itself a quest of doubtful validity. In a sense, perhaps the most useful purpose of the statistics of a national dividend is to indicate the trend of the country's progress; thus, for example, error which may vitiate the absolute value of a figure of National Income can, if it is constant over a period, be ignored in using those figures to discover the trend of progress; but even here we must use the figures with caution, for during the period under review, changes in prices, changes in customs, changes in the degree to which the country's economy is non-monetary, changes in people's preference for articles of food, drink, dress, toilet, etc., may all take place and thus make difficult the comparability of the historical figures. In spite of these limitations, however, we cannot deny the utility of computing the figure of National Income. In fact, under certain circumstances, the limitations lose a good deal of their formidable character. Take for example the extent to which the country's economy is non-monetary; if one can take this complicating factor as constant, or if one knows the trend of its change, then proper allowance can be made for the same before we draw inferences from our figures. Moreover, if two countries have economic systems which are non-monetary to a similar extent, other things being equal, comparisons can be instituted between their economic conditions on the basis of income statistics. The qualifying factors have been mentioned, however, in order to show the dangers inherent in using statistics of National Income without mentioning the qualifications on the validity, firstly of the figure itself, and secondly on that of the use of the figure. But it does not, there-

fore, follow that it is useless to make an estimate of National Income. That it is a useful subject for investigation is abundantly borne out by the efforts of men like Flux, Bowley, Gini, Mitchell, King, Stamp, Sutcliff, Clark, Kuznets and others. It may also not be out of place to point out that more important than the ultimate figure of the dividend itself, are the figures which are obtained in the course of the investigation. The calculations we have to make necessarily lead us on, for example, to consider the sources from which the nation derives its income, the territorial distribution of the income — rather important in a country so extensive in area as ours — the share which accrues to labour, and possibilities of capital development in the country. Indeed we can say that not only are the statistics of National Income important in themselves, but the material which one accumulates in the course of arriving at this figure throws light on various important features of the economic position of the country and should be highly relevant in formulating schemes for its planned economic development.

In the light of the foregoing discussion on the concept of National Income and its limitations, we may now proceed to formulate the definition of National Income.

The National Income of a country is the money value of the flow of commodities and services, excluding imports, becoming available for sale (or capable of being sold) within the period, the value being reckoned at current prices, minus the sum of the following items :

(*a*) The money value of any diminution in stocks that may have taken place during the period ;

(*b*) The money value of the flow of goods and services used up in the course of production ;

(*c*) The money value of the flow of goods and services used to maintain intact existing capital equipment ;
(value being reckoned at current prices in all these cases) ;

(*d*) Receipts of the State from indirect taxation ;

(*e*) Favourable balance of trade including transactions in treasure ;

(*f*) Net increase in the country's foreign indebtedness or the net decrease in the holdings of balances and securities abroad, whether by individuals or the Government of the country.

The first part of the definition corresponds to gross income ; the second clause enumerates the deductions necessary to reduce it to net income. Our definition lacks the elaborateness of Prof. Bowley's, while it differs from Mr. Colin Clark's in that reference is made to goods and services ' becoming available for sale ' instead of ' becoming available for consumption '. The main reason for our use of the term ' for sale ' is to distinguish in the definition itself the exclusion of services that are available for consumption but are not normally offered for sale, such as those of wives and mothers. Another advantage arising from the use of this phrase is that it deliberately excludes any opinion on whether durable consumption goods like motor cars and furniture sold during the year are actually consumed during the year. The addition of the words ' or capable of being sold ' is not only intended to cover the annual value of houses occupied by their owners, but also that of the very large proportion of India's

agricultural output which is not offered for sale. The exclusion of imports from gross income is necessary in order to avoid double counting, as exports are included, and after all imports are, by imputation, the product of exports.

Regarding the deductions to be made from gross income, clause (*a*) which refers to stocks is only of academic interest as far as we are concerned. No statistics of stocks are available for Indian output. In any case, considering that cartels are absent in Indian agriculture and that organized Indian industry is still comparatively unimportant in Indian economy, it is reasonable to assume that stocks remain unchanged from year to year. The omission of stock from our actual calculation should not, therefore, affect its validity to any significant extent from the point of view of this definition.

As for clauses (*b*) and (*c*) no special explanation is necessary. As our study of Indian Income is based partly on the 'inventory' method and partly on the 'income' method, such deductions are only necessary in the case of agricultural and allied output; for the *net* incomes of earners engaged in non-agricultural occupations will be directly estimated.

Clause (*d*) is really a matter of book-entry on both sides of the balance-sheet. In order that the National Income may conform to the aggregate of exchange values accruing to consumers, (*i.e.* reckoning the value of commodities and services at current prices which includes indirect taxation), it is necessary to add the receipts from indirect taxes; but these receipts represent nobody's income, as even the incomes of Government servants are separately included. There is, therefore, no flow of either commodities or

services not already included in the National Income which corresponds to the payment of these indirect taxes. It is necessary, therefore, that they should be deducted as an expense, in arriving at the figure of the country's net income.[1]

Clauses (*e*) and (*f*) should really be taken together. When a country has a favourable balance of trade, including transactions in treasure, it means that a part of its production ceases to be available for the country; and the value of this part should be excluded from a computation of the country's net income. Of course, this favourable balance may really be due to an export of capital and, therefore, offset by an import of securities. In such a case, the favourable balance does not really represent a loss of income for the country. On the other hand, the favourable balance may not fully represent the loss of income for the country. In addition, there may either be an increase of the country's indebtedness abroad or a diminution in its credit balances abroad, which really should be counted as an item for deduction in arriving at net income. Hence it is that items (*e*) and (*f*) should be taken together.

Having explained our definition of National Income, it is perhaps unnecessary to add that our study of Indian Income conforms to this definition. In the next chapter, we proceed to a discussion of the data available and to state our method of approach to the problem of computing Indian Income.

[1] Further confirmation of the procedure adopted by us is available in the latest study of a country's National Income, viz. *National Income of Australia*, by Colin Clark and J. J. Crawford. The distinguished authors define Net National Income produced as "Gross income produced subject to the deduction of two amounts, namely, the value of depreciation and maintenance, and of indirect taxation", p. 3.

CHAPTER II

SOURCES AND METHOD OF APPROACH

We may now proceed to a discussion of the data available for making a computation of Indian Income, and our method of approach to that problem. Sir J. C. (now Lord) Stamp has pointed out in his address to the centenary meeting of the Royal Statistical Society that there are two methods of calculating the National Income which he terms 'the income method', and 'the census or inventory method' respectively. "Sometimes, only one method or set of facts is available. Sometimes both are used and can act as checks on one another; sometimes the total estimate must be arrived at by the use of each over a part of the field, and their subsequent aggregation."[1] The use of the *inventory* method depends upon the existence of a comprehensive census of production; that of the *income* method, on (1) income-tax statistics that would cover an appreciable part of the earning population and (2) an

[1] *Statistical Journal*, 1934, p. 428 Also cf. Bowley-Robertson Report, p. 9. "As is well known, there are two methods of calculation, the first consisting in the evaluation of the goods and services accruing, the second in a summation of individual incomes. The two methods do not furnish a check over one another over the whole field: thus the services of cabinet ministers must be held to be worth the amount of their salaries, since there is no other way of evaluating them. In the case of India it seems unlikely that the first or census of products method will ever be applicable over the whole, even of the industrial field; and special caution in combining the results of the two methods may be necessary."

adequate wage census. In India, the State issues estimates of the annual output of the principal agricultural crops, and statistics of mineral output, but no returns are published of the output of either meat or dairy products. There is no census of industrial production,[1] and in view of the predominantly unorganized and individualistic character of Indian industry, it is very doubtful if there ever can be a census which will cover the whole of the industrial field. Income-tax statistics refer only to non-agricultural incomes, and cover the incomes of less than a million persons out of a total of 28 million workers in non-agricultural occupations.[2] There is no All India wage census; but a number of provinces publish, at by no means uniform intervals, a few inadequate figures of the rates of wages of rural workers, while the reports of the chief Inspectors of Factories for the different provinces contain admittedly rough estimates of the average wages of some of the principal types of factory workers. Though Schedule A of the Indian Income-Tax Act deals exclusively with the income from house property, there are no statistics of the total income taxed under that head. No returns are published of the number or salary bill of Government servants or of the employees of local authorities. Nor is any

[1] Since 1934, Government has begun issuing statistics of the output of the following organized industries: viz. cotton, jute, wool, iron and steel, paper and chemicals

[2] The reference is to the year 1932–33, when the minimum exempt income was Rs. 1000; since then, the minimum has been raised to Rs. 2000 It is true that even in that year, the number of assessees was only 564,000, but this figure includes a number of 'legal' persons who really stand for more than one individual each; and making due allowance for these, we estimate the number of actual persons paying income-tax at nearly one million.

information available on the earnings of domestic servants. It is not necessary to add that social insurance statistics of the type which Mr. Clark has recently pressed into service for estimating National Income are conspicuous by their entire absence. In fact, there is no information even on the subject of the number of wage-earners and the number of independent workers in the country. The statistical prospect is dreary indeed. Not unduly discouraged, we have tried to supplement the data available in blue books. "Wide and varied is the range of material which may have to be pressed into service" says Sir J. C. (now Lord) Stamp, and our study may perhaps provide a good illustration of that happy statement.

First, we had recourse to all published semi-official and non-official literature that threw the least light on the economic condition of any section of our population. Thus we examined village studies, working-class budgets, report, evidence and appendices of the Royal Commissions on Agriculture and Labour and of the Banking Committees, and a number of agricultural and industrial bulletins and monographs published by different provincial governments. By this means we were able to gather some quantitative data on such subjects as milk yields, consumption of grain by cattle, value of agricultural implements, distribution of holdings and earnings of urban and rural artisans.

Second, we instituted a number of *ad hoc* inquiries of our own into the quantity and value of the output of livestocks products and the earnings of some important classes of non-agricultural workers. Brief accounts of these are given below, details

being left to the appropriate chapters. Copies of the forms and relevant extracts from letters referred to in these inquiries are reproduced in Appendix A.

(1) We issued a circular letter to the 785 Indian municipalities, requesting them to furnish us with statistics of the slaughter of cattle and sheep and goats in their licensed slaughter houses for the years 1919–34. We received 77 replies. We then circularized another letter, requesting them to give us statistics for the year 1933–34 alone, to which we received 116 replies.

(2) We circularized the Health Officers of the different municipalities, requesting them to give us their estimates of the milk consumption in their towns. We received 25 replies.

(3) We requested the chief officers of municipalities to give us figures of the number of their employees who pay income-tax, the number who do not and the salary bill of each group; also the wage usually given to a newly recruited peon. We received 106 replies.

(4) We prepared a questionnaire on rural economic conditions, with particular reference to some of the quantitative data we required, and sent them to 48 agents of the All India Village Industries Association, all of whom are intimately acquainted with rural conditions. Some of them undertook special inquiries before replying to our letter. We received 25 replies.

(5) We prepared a detailed scheme for village studies and printed the different forms in which information could most usefully be

collected. We were able to get 3 villages in the Bombay Presidency surveyed on the lines of this scheme, and we were also able to induce the Government of the United Provinces of Agra and Oudh to get surveyed on the same lines 4 villages in that province by their special investigators.

(6) We attempted, rather foolishly, a gigantic industrial and wage census. We sent to 8000 industrial establishments in India, employing more than 20 workers each, and including concerns run by the State and local authorities, two forms and a circular letter. One form related to details of the value of industrial output, the other to the number of workers employed, tabulated into a small number of wage groups; the circular letter, after an impressive catalogue of personal achievements and a judicious exploitation of the august reputation of the Garton Trustees, requested that the forms should be filled up and returned to the writer. We shall have more to say of these forms in Chapter VIII. Of the replies we received, only 130 contained the information required. We have no doubt at all that if we had been less ambitious, and sent round a simpler questionnaire, asking only for the number of people employed and their total wages bill, we would have got more answers. But recognition of our own foolishness only aggravates the feeling of loss at missed opportunities; and the weight of self-censure is the heaviest of all.

(7) We prepared a special form for the earnings

of domestic servants, copies of which were printed and sent to responsible people in more than 80 towns in India. We requested them to get the forms filled up by themselves and their friends. We ourselves got many of these forms filled up in Bombay. In all, we got 280 forms completed, relating to conditions in 23 towns.

(8) We conducted a special inquiry into the earnings of barbers and washermen in the city of Madras, and succeeded in obtaining some quantitative data.

Third, we addressed a number of letters on subjects such as wages, milk yield, cattle food, seed rates, yield of special crops, number of persons employed and their salary bill, etc., etc., to the principal officers of the different provincial governments who were in charge of departments touching our inquiry. Directors of Agriculture, Commissioners of Labour, Directors of Information, Livestock Officers, Directors of Veterinary Services, Secretaries of different departments, even Accountants General — all heard of the Garton Trust and our inquiry into Indian Income; and many of them gave a great deal of useful information to the writer. Not satisfied with his persecution by correspondence, the writer undertook a tour of the country, visiting a few of the provincial capitals and discussing some of the difficulties he was encountering with a number of high government officials. He also visited the headquarters of the Government of India and had some useful interviews with the Secretary and other officers of the Imperial Council of Agricultural Research. Almost like Jason in quest of the golden

fleece, the author wandered, wrote, talked, and questioned, seeking the elusive figure of the National Income.

The method we have followed for calculating the National Income of British India has been mainly determined by the grim necessities of the statistical situation just outlined; and we have had to combine both the 'income' and the 'inventory' methods. Taking the occupational census as a basis, we estimate the number of earners in the country, the sum of whose incomes will make up the National Income. We then divide this number into two sections — those whose incomes we evaluate by the 'inventory' method, and those whose incomes we evaluate by the 'income' method. The first section accounts for the income of 69 million workers, the occupations covered being agriculture, pasture, mines, forests, fishing and hunting. The second section deals with the incomes of the remaining 28 million workers, the occupations covered being industry, trade, transport, public force, and administration, professions and the liberal arts, and domestic service. Workers in these non-agricultural occupations are in turn divided into two sections, those who pay income-tax and those who do not. Incomes of the former are obtained from income-tax statistics, while as regards the latter, we use figures of average earnings in each group, based on the results of our *ad hoc* inquiries and a judicious use of published material. To these totals is added an estimate of income from house property and other miscellaneous items which cannot be specifically identified with any particular set of occupied persons. From each total we deduct the money value of the goods and

services consumed in the course of production, *e.g.* seeds, raw materials, etc., and that of the goods and services used to maintain intact existing equipment, *e.g.*, repairs, depreciation, etc. It is regrettable that we can make no specific allowance for depreciation for the most important part of the country's productive equipment, viz. land and livestock; but there is no practical way of ascertaining changes in the productive quality of these two important means of production. By aggregating the net totals under these two heads, and deducting any net increase in the country's foreign indebtedness, we get the entire National Income.

Finally, we must point out that we have selected for study the income of British India alone, because the statistics, meagre as they are, are almost non-existent for the Indian States. The year we have selected for study is 1931–32. Our main reason for doing so is the fact that census occupational figures form the basis of our calculations of income and as the census was taken in 1931, they would be nearest to actual conditions in that year. Moreover, revised standard yields of principal crops for the quinquennium ending 1931–32 were issued in 1935, and we can use them to revise the forecasted yields of principal crops for 1931–32 given in the *Estimates of Area and Yield for Principal Crops in India* for that year which are based on the old standard yields. It may be objected that the year 1931–32 was a year of depression and may tend to give an unduly pessimistic account of Indian money incomes; but the subsequent years are no better, and going back to the previous decade would involve more than compensatory difficulties. We may, however,

draw attention to the depressing effect on the money total of Indian Income which our choice of this year involves.

We have divided our study into fourteen chapters. In the first two chapters we discuss the concept of income and the method of approach to the calculation of Indian Income. Then follows the study proper. In the third chapter we deal with the number of incomes in the country. A detailed analysis is undertaken of the occupational statistics contained in the census of 1931 and separate estimates are made of the number of urban and rural earners and the occupations they follow. We then go on to deal with the value of agricultural and allied output, and the resulting income of earners engaged in agricultural and allied occupations. Thus in Chapter IV we compute the quantity and value of agricultural output, in Chapter V we estimate the quantity and value of livestock products such as milk, meat, wool, etc., and in Chapter VI that of fish, forest produce and minerals. This is followed by our calculations of the estimated income of all earners engaged in non-agricultural occupations. Chapter VII deals with the income of that section of non-agricultural earners who pay income-tax. Chapters VIII to XII deal with the income of the remainder, viz. those whose incomes are below Rs. 1000 a year. Chapter VIII is concerned with the income of industrial workers, Chapter IX with the salaries and wages of workers employed in the service of the State and in the working of railways, posts and telegraphs, and Chapter X with the income of persons engaged in trade and in forms of transport

other than those dealt with in the previous chapter. In Chapter XI we discuss the income of earners engaged in professions and liberal arts, while in Chapter XII the income of domestic servants is estimated. Chapter XIII is a miscellaneous chapter and deals with income from house property and other additions and deductions. In Chapter XIV, we sum up the estimates made in the previous ten chapters and arrive at our estimate of the income of British India. Such is the long trail that leads to our journey's end.

CHAPTER III

THE NUMBER OF INCOMES

ACCORDING to the census of 1931, the population of India numbered 352·8 millions, of whom 181·8 millions were males. The population of British India, with which alone we are concerned in this study, was 271·5 millions, of whom 139·9 millions were males and 131·6 millions females. These figures include the entire population and have to be further analysed in order to obtain the number of earners of income.

The census figures include occupational tables which give classified statistics of the number of persons engaged in different occupations. The information contained in these tables is very meagre indeed. Even the number of employers is not distinguished from that of employees; and it is not possible to separate such radically different classes as managers, clerks, foremen, skilled workers and general labourers, each from the next.[1] In fact even the age composition of the occupied population is not shown in these figures. This last omission has its compensation, for it has enabled us to judge the comprehensiveness of the statistics of occupied population by comparing them with estimates of the

[1] Cf. Bowley, *Statistical Studies relating to National Progress*, 1904, p. 9. We have been tempted to reproduce the language employed in that work.

possible employable population as calculated from the returns of age composition.

If we assume that all males between the ages of 15 and 55 are employable, plus a half of those between the ages of 10 and 15, we get a working population of males of 83·8 millions. The number of males returned as workers (excluding workers having subsidiary occupations who are already counted in under their principal occupations) is 80·7 millions. As regards women, on the assumption that those between the ages of 15 and 55 are capable of work, we get a working population of 72 million females; the number returned as occupied is 36 millions or 50 per cent of those who can work. The percentage is too high even for a western country with its more advanced industrial and social organization; and is explained in the case of India by the 14 million women who are returned as workers though they are only dependants assisting the principal earner in his work. Under the circumstances it is reasonable to proceed on the assumption that the census occupational figures — for what they are worth — do account for the entire working population. As regards the reliability of the figures of distribution of the working population among different occupations, we may point out that the original schedules contained a column for 'industry', and though the idea of compiling an industrial census was given up later on, these returns were utilized in classifying occupations, and, therefore, lend them a greater measure of accuracy.

The census enumerates the persons following each occupation under three heads: (1) those who are following it as their principal occupation, (2)

those who are following it as an occupation subsidiary to their principal occupation, and (3) working dependants. Working dependants are defined as "dependants following any occupation which contributed to the family maintenance, and not themselves receiving the wage or controlling the means of subsistence gained". The last class really corresponds to dependants engaged in — to borrow Mr. Clark's phrase — familial occupations, and presumably have an imputed income. Classes 1 and 3 measure the number of workers; classes 1, 2 and 3 measure the number of incomes. The number of incomes is larger than that of earners, as a number of earners follow more than one occupation (class 2).

The total number of persons returned as following an occupation of some sort in British India was 116·3 millions, consisting of 97·6 million principal workers, and 18·7 million working dependants. In addition, 11·1 millions of the principal workers supplemented their earnings by following a subsidiary occupation.

In the detailed calculation which follows, we are mainly concerned with calculating the incomes of persons who are following an occupation as their principal occupation, or principal workers or earners as we call them in this work. The incomes arising from supplementary occupations and those imputable to working dependants are calculated as a proportion of the income of principal workers and not independently. Table 1 gives statistics of the occupational and sex classification of all workers in British India, including working dependants and subsidiary occupations.

Item X in the table has obviously to be redistributed over the known occupations, if we are to

TABLE I

(Figures in Thousands)

Serial No.	Description of Occupation	No. of Workers following the Occupation Specified in Column 2 as:								
		Principal Occupation			Subsidiary Occupation			Working Dependant		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
I.	Exploitation of Animals and Vegetation	54,077	14,425	68,502	4,567	794	5,361	3,537	6,149	9,686
II.	Exploitation of Minerals	194	62	256	2	1	3	1	—	1
III.	Industry	7,950	2,504	10,454	1,396	251	1,647	277	905	1,182
IV.	Transport	1,578	99	1,677	320	11	331	36	11	47
V.	Trade	4,120	1,277	5,397	886	161	1,047	118	229	347
VI.	Public force and Administration	1,131	16	1,147	162	1	163	10	2	12
VII.	Professions and Liberal Arts	1,333	183	1,516	295	17	312	146	27	173
VIII.	Domestic service	1,301	658	1,959	177	1,308	1,485	188	6,389	6,577
IX.	Independent income	114	25	139	48	2	50	4	3	7
X.	Insufficiently described	3,679	1,978	5,657	458	114	572	129	300	429
XI.	Unproductive	600	316	916	59	13	72	153	100	253
	Grand Total	76,077	21,543	97,620	8,370	2,673	11,043	4,599	14,115	18,714

get some idea of the earnings of the workers in that group. Turning to the detailed figures under this census head, we find that it is made up of the following sub-heads :

TABLE 2

(Figures in Thousands)

Description	Workers following Occupations Specified in Column 2 as								
	Principal Occupation			Subsidiary Occupation			Working Dependants		
	M.	F.	T.	M.	F.	T.	M.	F	T.
(*a*) Manufacturers, businessmen and contractors otherwise unspecified . .	80	4	84	11	—	11	1	—	1
(*b*) Cashiers, accountants, book-keepers, clerks and other employees in unspecified warehouses, offices and shops . .	617	32	649	50	3	53	6	5	11
(*c*) Mechanics otherwise unspecified . .	31	2	33	1	—	1	—	—	—
(*d*) Labourers and workmen otherwise unspecified .	2951	1940	4891	397	111	508	122	295	417

It is clear from Table 2 that the workers following insufficiently described occupations are normally employed in Industry and Trade.[1] Sub-heads (*c*) and (*d*) relate obviously to workers engaged in Industry and should be added to that head ; while sub-heads (*a*) and (*b*) may refer to workers engaged in either Industry or Trade. If we assign the total number of workers under those two sub-heads to Industry and Trade in equal proportions, we get the

[1] Cf. Dr. J. H. Hutton, *Census Report*, p. 281 : " The insufficiently described occupations in that class are, at any rate, in the great majority of cases, general terms connected with Industry and Trade, such as ' Shop Keepers ', ' Trade ', ' Contractor ', or ' Coolie ', which cannot be allotted to any particular category."

following corrected totals for the workers occupied in Industry and Trade.

TABLE 3
(Figures in Thousands)

Occupation	Principal Workers			Subsidiary Workers			Working Dependants		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Industry .	11,280	4,464	15,744	1,826	363	2,189	402	1,202	1,604
Trade .	4,469	1,295	5,764	919	163	1,082	122	232	354

There is another figure in Table 1 which needs reclassification in the light of Dr. Hutton's observations in the body of his *Census Report*.[1] The number of females who have returned 'Domestic Service' either as principal workers or as working dependants is 8·8 millions as compared with less than a million in 1921 — an increase of nearly 900 per cent. At the same time, there has been an unaccountable decline of more than 6 millions in the number returning agriculture as their occupation. Dr. Hutton is of the opinion that these increases and decreases are more apparent than real, and should really counterbalance each other. It is possible that wives in India are getting conscious of their economic contribution in the form of domestic service; it is more probable that domestic service has gained in status during the last decade, and women who assisted their husbands both in the fields and in the homes have now preferred to return domestic service as their occupation. But the services of wives, valuable as they are, are excluded from our definition of income; we think it preferable, therefore, to transfer at least 5 out of these 6·4 million working

[1] *Vide* Report, p. 281 and p. 295.

dependants from Domestic Service to Agriculture. The revised totals of female working dependants is, then, 13 millions in Agriculture and 1·6 millions in Domestic Service.

We now come to a very important question. Can we identify the number of earners with the number of persons returned as occupied in the decennial census? The census returns of occupations, as pointed out by Dr. Bowley and Sir J. C. (now Lord) Stamp, "depend on the unverified statements of householders, and include persons out of work, ill, incapacitated, elderly, and no doubt in some cases superannuated." [1] Even with a recognition of these deficiencies, the census returns were not quite safe. Mr. Colin Clark used social insurance statistics to estimate the number of workers and found that his figures differed by 'a mysterious million' from the number estimated on the basis of census returns. The census returns showed a much larger figure of occupied persons. The explanation lay partly in the fact that a number of workers in State and municipal employment were neither insured nor specifically exempted from insurance. But part of the explanation lay also in the fact that a large number of chronically unemployed men were returned as occupied in the census returns.

No figures are available to show either the proportion of unemployability or that of unemployment among the occupied population of India. And yet there is no doubt that the 98 million persons shown as principal workers in the census returns cannot all be actually employed. Some of them must be old, incapacitated, ill or otherwise chronically unem-

[1] *The National Income*, p. 13.

ployed ; these are the unemployables. It is difficult to estimate their number. Mr. Colin Clark's estimate of the similar figure for Great Britain works out to a little more than 2 per cent. It must be higher in India, partly because our general health and nutrition conditions are much worse than in England and partly because the Hindu joint family system makes it easier for the unemployables to live on the income of their relatives. We may, therefore, place the proportion of these unemployables at 5 per cent of the total number returned as occupied in the census report. Then there are the unemployed. These consist of persons who are able-bodied, healthy and in a position to work, but cannot do so for want of opportunity. Under this head, I am referring not to those who are normally seasonally unemployed, but to those who have lost their jobs due to the depression or technological progress or some other reasons and are, therefore, on the unemployed list. It is difficult to get an idea of the extent of this kind of unemployment. But some indication of its magnitude is obtained by the fact that the number of persons returned in the census as insufficiently described, rose by nearly 30 per cent over the corresponding figure for 1921. Allowing for the increase in population during the decade, the effective increase in this category comes to one million persons. There is no reason to suppose that the efficiency of census operations in 1931 was any less than that of 1921, except in so far as the former was affected by the congress boycott of the census. Even then, one cannot help believing that a large proportion of the increase in the number under indefinite occupations probably indicates the state

of unemployment of those who were previously employed in recognized occupations.[1] This figure may be placed at at least 50 per cent of the increase, or 500,000 persons. As the number of employers, independent workers and wage earners occupied in Industry and Trade was 25·5 millions, our reasoning would give an unemployment percentage of less than 2, a not unreasonable proportion to expect from our knowledge of economic conditions in India, and the experience of other countries with regard to industrial and commercial unemployment.[2]

[1] Cf. Dr. Hutton: "It is possible the greater prevalence of unemployment in 1931 as compared to 1921 has contributed to diverting returns from definite to indefinite categories. The census schedule contained no provision for any distinction between a man employed in his normal calling and one having a calling but temporarily unemployed and in the case of many callings in industry and trade the distinctive function of the individual will largely depend on what he is doing at the time when the census takes place, since the particular direction of his energies will normally vary from time to time according to the demand for labour or goods or the nature of openings that present themselves. Thus a labour contractor might be returned at one census under transport by road, at another transport by rail and at a third under transport by water according to the purpose for which he supplied the labour. If *without a contract, he would be a contractor and nothing more and therefore relegated to class XI. The same obviously applied to labour and in point of fact to a considerable volume of industrial and trading occupations in India* where industry in general is less specialized and functions less differentiated than in highly industrialized countries of the west" (italics ours), p. 281. The considerations mentioned in the last clause have, *inter alia*, led us to refrain from using the detailed figures of numbers in the subdivisions under Industry and Trade.

[2] The percentage of unemployment is smaller in the case of India, as a large proportion of the 25·5 million persons returned as engaged in Industry and Trade are either employers or independent artisans, or workers on contract who do not regard themselves as wage earners. The unemployment of these classes really takes the form of underemployment and cannot be traced in the census figures. If this fact is taken into account, our estimate of 500,000 as the number of unemployed will constitute a percentage of our wage earners that is comparable with the corresponding figure of other industrial countries.

We conclude then that the number of occupied persons is probably greater than the number employable by 5 per cent; in addition to which, about half a million persons returned as engaged in Industry and Trade are probably unemployed. Therefore, out of the 980 lakhs of principal workers, no less than 53 lakhs have no income.[1] A major part of this number naturally will be accounted for by agriculture. But we need not bother about the number of unemployables among persons engaged in agricultural and allied occupations, as its magnitude can make no difference to our figures of National Income, the value of their output being calculated on the 'inventory' method. It is later, when we employ the income method and make use of the number of occupied persons and their average earnings as basic data, that unemployability and unemployment can affect our figures of National Income. The number of presumably occupied persons in these non-agricultural occupations who have no income would be, on our assumptions, 1·8 millions out of a total of 28 millions, which works out at a little less than 7 per cent; 1·3 million of these are drawn from all non-agricultural occupations including Industry and Trade, and have no income because they are ill or incapacitated or almost chronically unemployed; while the remaining half a million workers are drawn from Industry and Trade and have no income because

[1] The 53 lakhs is made up of 5 lakhs of the unemployed and 48 lakhs of the unemployables. It will be noticed that 48 lakhs is less than 5 per cent of 980 lakhs. This is because we have not applied the percentage to the 22 lakhs of workers engaged in public services, persons living on their private income, and persons engaged in unproductive occupations.

of loss of employment — a result probably of the 'Great Depression'. As earners with incomes above Rs. 1000 a year are directly covered by income-tax statistics, this 7 per cent of non-income-receiving occupied persons is drawn wholly from workers with annual incomes below Rs. 1000. It is difficult to assign the 1·4 millions of unemployables over the different non-agricultural occupations. But a working hypothesis would be to assume that the unemployability is proportionate to the number returned as occupied under the different census heads. Similarly, the 500,000 unemployed can be distributed between Industry and Trade in proportion to the census numbers of total workers returned under each.

There is one more reduction which will have to be made before we can arrive at the figure of actual earners or the number of incomes. 900,000 persons returned their principal occupation as being inmates of jails, asylums and almshouses, begging, vagrancy, procuring, prostituting, etc.; 70,000 followed these as subsidiary occupations, while 250,000 formed working dependants. The economic value of their activity is nil, and the money value of their incomes should be regarded as a charge on, and not as a contribution to, National Income. Similarly, persons who are living on their private income cannot have their incomes included in a computation of National Income. No attempt, therefore, will be made to value the incomes of these persons, as also the incomes of those whom even the census classifies as following unproductive occupations. Table 4 gives the statistics of actual earners or the number of incomes we have to evaluate.

For purposes of computing the incomes of non-agricultural workers, it is necessary not merely to know the number of workers, and their sex and occupational classification, but also their distribution among rural and urban residents, as the rate of earnings shows a marked difference according as

TABLE 4

PRINCIPAL EARNERS

(Figures in Thousands)

No.	Description	Total returned as Occupied	Estimated No. of Unemployable Persons	Estimated No. of Unemployed	Total No. of Actual Earners
I.	Exploitation of Animals and Vegetation	68,502	3,425	—	65,077
II.	Exploitation of Minerals	256	—	—	256
III.	Industry	15,744	787	365	14,592
IV.	Transport	1,677	84	—	1,593
V.	Trade	5,764	288	135	5,341
VI.	Public Force and Administration	1,147	—	—	1,147
VII.	Professions and Liberal Arts	1,516	76	—	1,440
VIII.	Domestic Service	1,959	98	—	1,861
IX.	Independent Income	139	—	—	—
X.	Unproductive	916	—	—	—
	Grand Total	97,620	4,758	500	91,307

they are working in urban or rural areas. Moreover, it is also interesting from a general sociological point of view to have an idea of the number of occupied persons in towns and villages, and their occupational classification. We have, accordingly, attempted below a rough estimate of the number of urban and rural workers and their occupational classification, basing our calculations on the data available for a part of the urban population.

We have taken as our basis all available occupa-

tional statistics of the urban population. Unfortunately, census operations were restricted only to the cities in most of the provinces, except in Madras and the United Provinces where the big towns were covered as well. The resulting limitations in our data are clearly revealed in the following two tables.

TABLE 5

Province	No. of Cities and Towns for which Information is Available	Total Population of the Cities and Towns mentioned in Column 2. (in Thousands)
Bombay . .	4	1817
Bengal . . .	4	1624
Madras . .	22	2242
United Provinces .	23	2491
Bihar and Orissa .	4	415
Punjab . . .	3	814
Central Provinces .	2	340
Assam . . .	—	—
N.W.F. . .	1	87
Total .	63	9830

The size distribution of these sixty-three towns and cities is given below :

TABLE 6

Description of Size	No. of Cities	Total Population (in Thousands)
Exceeding 10 lakhs . .	2	2358
Between 10 lakhs and 2 lakhs .	11	3255
Between 2 lakhs and 1 lakh .	12	1680
Below 1 lakh . . .	38	2537
Total .	63	9830

We have, nevertheless, proceeded to use this data as it accounts for as much as 35 per cent of the urban population. The big towns are directly covered by the data ; as for the smaller towns, the data avail-

able is of such a kind that on analysis it yields certain broad conclusions applicable to their population as well.

The following table gives the statistics of principal workers in the urban population enumerated in Table 6.

TABLE 7

(Figures of Population in Thousands)

Towns and Cities with a Population of	Total Population	No. of Principal Earners	Percentage of Principal Earners to Total Population	No. of Principal Earners who are Females	Percentage of Females to Total Principal Earners
10 lakhs and over .	2358	1168	49·5	96	4·1
Between 2 lakhs and 10 lakhs . .	3255	1172	36·0	119	10·1
Between 2 lakhs and 1 lakh . .	1680	587	34·9	86	14·7
Below 1 lakh .	2537	948	37·3	153	16·1
Total .	9830	3875	39·5	454	11·7

It will be noticed that the percentage of earners to the total population is highest in the principal cities, and declines with diminution in size of the urban centre; but the decline does not persist, for it rises to 37·3 per cent for towns with population below 1 lakh. The general average for the rest of the population including that of the small towns is 35 per cent. As the condition of the smallest towns approximates more to the villages than to the big cities like Bombay, Calcutta or Madras, the percentage of earners cannot be far above 35; at the same time, there is no reason to believe that this percentage exceeds that of the towns with population below one lakh. Under the circumstances we can apply to the population of the small towns a percentage of 37·3 to determine the number of their earners.

This figure will contain, if at all it does, a slight element of over-estimation not exceeding 3 per cent.

The proportion of female earners to total earners shows a steady rise with diminution in the size of the urban unit, from 4·17 for the big cities to 16·1 per cent for the towns with population below one lakh. The average proportion of women earners to total earners for the rest of the population, including that of villages and of the small towns, is 22·4 per cent. It will, therefore, be reasonable to place the percentage of women earners to total earners in the rest of the urban population at between 16·1 and 22·4; we propose to adopt the figure of 20 per cent for the purpose of our calculations. The following table gives our estimate of the number and sex classification of urban earners on the basis of the reasoning explained above.

TABLE 8

(Figures in Thousands)

Description	Population	No. of Principal Earners	No. of Female Principal Earners
Urban population for which statistics are available .	9,830	3,875	454
Urban population for which figures have to be estimated . . .	19,828	7,396	1,479
Total urban population .	29,658	11,271	1,933

Our next step is to estimate the details of occupational classification of these urban earners. Table 9 contains the information available on the subject from the provincial census volumes.

TABLE 9

(Figures of Earners in Thousands)

No.	Description of Occupation	Cities with Population of 10 Lakhs and Over		Cities with Population of between 2 and 10 Lakhs		Cities and Towns with Population between 1 and 2 Lakhs		Towns with Population of below 1 Lakh	
		Number of Earners	Percentage to Total Earners	Number of Earners	Percentage to Total Earners	Number of Earners	Percentage to Total Earners	Number of Earners	Percentage to Total Earners
I.	Exploitation of Animals and Vegetation	24·3	2·1	96·0	8·2	69·6	11·9	147·5	15·6
II.	Exploitation of Minerals	1·2	—	·7	—	·5	—	1·8	·1
III.	Industry*	488·0	41·9	473·2	40·4	244·0	41·6	389·9	41·3
IV.	Transport	107·5	9·2	108·4	9·2	34·4	5·8	62·4	6·6
V.	Trade*	259·1	22·2	210·3	18·0	109·5	18·7	175·7	18·5
VI.	Public Force and Administration	68·8	5·9	86·9	7·4	42·4	7·2	46·8	4·9
VII.	Professions and Liberal Arts	49·5	4·2	62·0	5·3	33·3	5·7	51·1	5·4
VIII.	Domestic Service	138·4	11·8	98·0	8·4	42·6	7·3	59·2	6·2
IX.	Independent Income	13·6	1·2	15·6	1·3	3·4	·6	7·8	·8
X.	Unproductive	18·0	1·5	21·4	1·8	6·9	1·2	5·5	·6
	Total	1168·4	100·0	1172·5	100·0	586·6	100·0	947·7	100·0

* These figures include the number returned as following insufficiently described occupations.

It will be noticed that in spite of the large difference in the size of the urban units there is not very much difference in the occupational distribution of the principal workers except with regard to persons engaged in agricultural and allied occupations and in domestic services. The proportion of principal workers engaged in agriculture and pasture records

TABLE 10

(Figures in Thousands)

Description of Occupation	Urban Population for which Statistics are Known	Urban Population for which Figures have to be Estimated	Total No of Earners in the Urban area
Exploitation of Animals and Vegetation	337·2	1153·8	1,491
Exploitation of Minerals	4·2	14·8	19
Industry	1595·1	3047·1	4,642
Transport	312·7	488·1	801
Trade	754·6	1368·2	2,123
Public Force and Administration	244·9	362·4	607
Professions and Liberal Arts	195·9	399·4	595
Domestic Service	338·2	458·6	797
Independent Income	40·4	59·2	100
Unproductive	51·8	44·4	96
Total	3875·2	7396·0	11,271

a steady rise from 2·1 per cent in the big cities to 15·6 per cent in towns with population below 1 lakh ; but we should not expect this proportion to record a further rise with diminution in the size of the urban unit, because the proportion of those engaged in industry is steady at about 41 per cent for all the urban areas, the corresponding figures for those engaged in trade and the professions also remaining steady at about 18·5 per cent and 5·5 per cent respectively for cities and towns with population

below 10 lakhs. The proportions of those engaged in public administration and domestic service have fallen from 5·9 per cent and 11·8 per cent in the big cities to 4·9 per cent and 6·2 per cent respectively for towns with population below 1 lakh and need not be expected to fall further. Similarly, for transport the proportion has fallen from 9·2 per cent to 6·6 per cent and need not be expected to fall further. We can, therefore, safely assume the occupational classification of towns with population below 1 lakh to be also generally true of towns of smaller size, and apply its percentage distribution to the latter to get our estimate of the workers engaged in different occupations in the smaller towns. Table 10 (opposite) gives our estimate of the number of workers in different occupations in urban areas.

By difference from the national totals, we now attempt the classification of the principal earners of the country into urban and rural earners in Table 11, on the following page.

These figures include the unemployable and unemployed persons who are earning no income, as well as the unproductive workers whose income should not be counted ; the number of actual workers whose incomes we have to evaluate is only 91·3 millions as per Table 4. In classifying these actual workers by urban and rural residence it is assumed that the 500,000 unemployed persons assigned to Trade and Industry, all come from the urban areas; and this number will therefore be deducted from our estimated figure of urban workers engaged in Industry and Trade. Table 12 gives classified statistics of the estimated number of *actual* urban and rural earners in the country, the total of whose individual

incomes makes up the National Income of British India.

TABLE 11

(Figures in Thousands)

Occupation	Total of Principal Earners	Estimate of Urban Earners		Estimate of Rural Earners	
		No.	Percentage of Earners in Col. 2	No.	Percentage of Earners in Col. 2
Exploitation of Animals, Vegetation and Minerals	68,758	1,510	2·2	67,248	97·8
Industry . . .	15,744	4,642	29·4	11,102	70·6
Transport . . .	1,677	801	47·8	876	52·2
Trade . . .	5,764	2,123	36·8	3,641	63·2
Public Force and Administration . .	1,147	607	52·9	540	47·1
Professions and Liberal Arts . . .	1,516	595	39·2	921	60·8
Domestic Service .	1,959	797	40·7	1,162	59·3
Persons Living on Private Income . .	139	100	71·9	39	28·1
Unproductive Works .	916	96	10·5	820	89·5
Total .	97,620	11,271	11·5	86,349	88·5

TABLE 12

(Figures in Thousands)

Occupation	Total of Actual Earners	Estimate of Urban Earners		Estimate of Rural Earners	
		No.	Percentage of Earners in Col. 2	No.	Percentage of Earners in Col. 2
Exploitation of Animals, Vegetation and Minerals	65,333	1,435	2·2	63,898	97·8
Industry . . .	14,592	4,045	27·7	10,547	72·3
Transport . . .	1,593	761	47·8	832	52·2
Trade . . .	5,341	1,882	35·2	3,459	64·8
Public Force and Administration . .	1,147	607	52·9	540	47·1
Professions and Liberal Arts . . .	1,440	565	39·2	875	60·8
Domestic Service .	1,861	757	40·7	1,104	59·3
Total .	91,307	10,052	11·0	81,255	89·0

Of these 91·3 million earners or incomes, 65·3 incomes are calculated on the *inventory* method in Chapters IV to VI, where we value the output of agricultural and allied industries, forest products and mineral produce. In Chapters VII to XII, we proceed to calculate the value of the remaining 26 million incomes on the *income* method. By combining the results arrived at in these chapters and after making certain necessary additions and deductions of a miscellaneous kind, we arrive at the final figure of the National Income in Chapter XIV.

CHAPTER IV

THE QUANTITY AND VALUE OF AGRICULTURAL OUTPUT

BEFORE proceeding to the actual calculations, we find it necessary to pause a while and reflect upon the nature of the statistical material available for this chapter. There is no dearth of blue books relating to agriculture.[1] Estimates of area under the principal crops, of forecasts of yield and of harvest prices, are all available, and it should be a simple matter of arithmetic to arrive at the quantity and value of the principal agricultural produce of British India. And in fact that is what we are reluctantly compelled to do, in spite of the preliminary reflections which follow.

We will begin with the statistics of the area under cultivation. The total net cropped area in 1931–32 was returned at 229 million acres. Of these, 34 million acres had more than one crop, *i.e.* yielded two harvests, thus making up a total gross cropped area of 263 million acres. "It is generally agreed that the annual figures of areas sown with the various crops are, on the whole, accurate and that they compare in this respect very favourably with those published for any other country in the world."[2] But it is also admitted that in areas which have their land revenue permanently settled—about 50

[1] The four main publications are: *Agricultural Statistics of India*; *Estimates of Area and Yield of Principal Crops in India*; *Quinquennial Report on the Average Yield of Principal Crops in India*; *Seasonal and Crop Reports of the Different provinces.*

[2] *Report of the Royal Commission on Agriculture*, p. 605.

million acres — classified statistics of the area under different crops are not equally accurate.[1] This is particularly true of Bengal and Bihar and Orissa, where, except for jute, reliance for crop statistics has to be placed mainly on reports from the police.[2] Such area covered 37 million acres or 16 per cent of the net cropped area. Adding to this area the part which bore more than one crop, we get 43 million acres or 16·5 per cent of the total gross cropped area. Thus it will be seen that even the first element in the formula for the valuation of agricultural produce is not free from error.

Then again, the classification adopted, even for the remaining area, contains a number of omnibus heads such as ' other food grains ', ' other oilseeds ', etc., which account for 43 million acres or 16·5 per cent of the total gross cultivated area, the value of the produce of which has to be separately estimated.[3]

[1] Details are as under :

	Acres in 000's
Bengal	18,017
Bihar	19,377
Assam	1,678
Madras	7,296
United Provinces	3,321

[2] Cf. *ibid.* p. 605 : " These reports are admittedly often mere guesses and are, not infrequently, demonstrably absurd guesses ". In the permanently settled areas in the other provinces, viz., parts of Madras and the United Provinces, the reporting agency consists of the more reliable village officers.

[3] We give the details for 1931–32 below :

	Acres in 000's
Other foodgrains including pulses	30,449
Other oilseeds	1,088
Condiments and Spices	1,594
Other sugars	168
Other fibres	686
Other dyes and tanning material	534
Other drugs and narcotics	264
Fruits : vegetables including root crops	4,896
Miscellaneous crops	2,922

Finally, even the figures of the area under principal crops are not quite complete, as no returns are made for a part of the area under rice, wheat, sugarcane, linseed, rape, mustard and seasamum. Estimates of the area left out and the yield therefrom are furnished in the introductory note to *Estimates of Area and Yield*, but no attempt is made to distinguish British India from the Indian States in these figures.[1] Going through the back numbers of this publication, we discovered in the issue of 1923–24, estimates of yield from such area exclusively for British India, except for wheat for which the figures also included the State of Kashmir. By reference to Volume II of *Agricultural Statistics of India*, we found the area under wheat in Kashmir in that year and, by deduction, obtained the estimated yield of wheat from the acreage in British India alone, for which no returns were made. Statistics of the output of these crops from 1924–25 onwards include 'certain Indian States' in addition to British India and show largely increased totals. We have, therefore, assumed in our inquiry that the estimated yield of non-reporting areas for British India remained the same in 1931–32 as it did in 1923–24. In any case, the quantities concerned are of a very small order of magnitude, and details are given in Table 13 when we proceed to calculate the quantity and value of agricultural output in British India. To sum up, for 16·5 per cent of the gross cropped area, statistics are not irreproachable;

[1] It is only subsequent to the recommendation of the Royal Commission on Agriculture (p. 602) that the figures of area and yield are given separately for British India and the Indian States, even for the area for which returns are made.

while for another 16·5 per cent, the acreage under cultivation is not classified under different crops in sufficient detail. In other words, details of area of a sufficiently reliable and informative character are available for only two-thirds of the gross cropped acreage.

We now pass on to the second element in the formula, viz., estimated yield. Forecasts of yield are compiled from local returns and published by the Department of Commercial Intelligence for rice, wheat, sugarcane, cotton, jute, linseed, rape and mustard, seasamum, castor seed and groundnut; for tea, coffee and rubber, no forecast is prepared, returns being obtained from the plantations concerned. For barley, jowar, bajra, maize, gram, tobacco and indigo, estimates are taken from the provincial Season and Crop Reports or are specially obtained from local authorities. Excepting for tea, coffee and rubber, the basis for estimating the yield of any crop is as follows. For each revenue division, a so-called standard or normal yield is determined by Government, defined as "that crop which past experience has shown to be the most generally recurring crop in a series of years, the crop which the cultivator has a right (as it were) to expect and with which he is (or he should be) content, while if he gets more he has reason to rejoice, and if less, he has reason to complain . . . briefly, it is the average yield on average soil in a year of average character." [1] The village officials have to report every year their estimate of the current yield in terms of its proportion to the standard yield; this is known

[1] *Estimates of Area and Yield of Principal Crops in India, 1932–1933*, p. 44.

as ' the state of the crop ' ; these reports are collated in the district headquarters, a district average is worked out, and the estimated yield of the crop is arrived at on the simple formula, *area under cultivation of the particular crop* × *standard yield per acre* × *state of the crop*. A number of objections have been advanced against this procedure. Dr. Bowley and Mr. Robertson point out in their report that the standard yields are based on estimates of old data and of doubtful validity and are only occasionally and locally modified by crop-cutting experiments. Even when the data compels a change, they suggest that it is made on a conservative basis, and the effect of improved seed is hardly allowed for in the estimates of yield. " Somehow the village accountant, the tashildar, or the District Officer has to relate his impression of the crops over a wide area with this vaguely defined standard, and to state his results in anna notation." [1] The stating of results in annas, coupled with the preference for even numbers, automatically leads to an error of 3 to 4 per cent in the estimate. Further, the seasonal factor as reported by the village accountants is subject to selective examination in the District Headquarters, and loose principles of averaging are followed in striking the district average of estimated yield.

We are in general agreement with the criticism advanced by Dr. Bowley and Mr. Robertson ; and we agree that reform on the lines suggested by them would go a long way to free Indian Agricultural Statistics from the charge of being the result of ' imperfectly informed guesswork '. In fact it is very surprising that previous attempts at calculating

[1] Report, p. 39.

Indian Income should have laid so little stress on the limitations of the estimates of agricultural output; and the consequent entry of a large element of guesswork in the calculations. But there are one or two minor points we would like to make in reply to the criticism advanced in the Bowley-Robertson Report.

A study of the quinquennial reports on the average yield per acre in India, beginning with the quinquennium ending 1892, makes it clear that these figures of standard yield should not really be regarded in a historical light; and changes in the standard yield in an upward or downward direction do not represent increasing or decreasing yield per acre. The first estimates were obtained on the basis of a great deal of miscellaneous data, and with every quinquennium, an attempt is made to bring the figures nearer the real normal yields. Thus, gradually the personnel in charge of crop-cutting experiments is being improved, subordinate revenue officers being replaced by trained officers of the Agricultural Department, and the number of experiments is also being steadily increased. Due weight must also be attached to the opinion expressed in a number of provincial reports that estimates of standard yield are gradually gaining in accuracy. It is true that though the revisions of yield are fairly numerous, the actual quantitative changes have not been very great for most of the crops; and this tendency towards constancy has evoked adverse comment. But, with great deference, it is suggested that this is as it should be. The Royal Commission on Agriculture, discussing the question whether the soils of India are undergoing

a progressive decline, expressed their opinion that there was a strong presumption that a stabilized condition has been reached and that " natural gains balance the plant food materials removed by crops and other losses and *no appreciable changes are to be expected in the outturn of crops except those due to changing seasons, provided that the same system of cultivation is adhered to* " [1] (italics ours). And it is notorious that over the greater part of India, methods of cultivation have undergone no appreciable change. This would point to a more or less constant yield. Messrs. Bowley and Robertson draw attention to the use of improved seed, and express their fear that this is not taken into account in estimating agricultural output.[2] It may be pointed out, however, that as against a possible increase in standard yield due to use of improved seed, there is probably a decrease in average outturn where increased pressure of population upon the land has forced the cultivator to till inferior soils.[3] Moreover, growing sub-division of holdings and increasing use of farm-yard manure for fuel purposes cannot certainly be adding to the yield per acre. Nor must it be forgotten that improved seed is not such an

[1] Report, pp. 75-76.

[2] Cf., " It is believed that an improved crop is not compared with a standard yield of a hypothetical unimproved crop as it should be for comparisons with years before the improvement, but with what the better seed would produce in an average year. It is thus probable that the increase that is known to have taken place from the records of areas sown with selected seed is very imperfectly shown in the figures." — Report, p. 39.

[3] *Vide Report of the Royal Commission on Agriculture*, p. 75 : " Density of population may also lead to a diminution in the number of periodical fallows and a resulting increase in weeds, and to an increase in the areas cultivated in relation to available supplies of manure and so may give rise to soil deterioration ".

important factor in increasing the yield per acre. Mr. Keatinge, who was for some time Director of Agriculture in the Bombay Presidency, circularized agricultural experts in Germany, France and England asking them to indicate the percentage increase in outturn due to various factors, including improved seed. Improved seed accounted for 10 per cent in England, 15 per cent in Germany and from 5 to 20 per cent in France. "Improved seed comes in a bad third, and it is made clear that even such limited advantage can be secured by good seed *only when the cultivation and manuring are adequate*" [1] (italics ours). And manuring is notoriously inadequate in India. The same writer, on the basis of experience obtained at experimental farms situated in the Bombay Presidency, suggested that an increase of 10 per cent might be obtained in crop outturns by use of improved seed.[2] The quantitative significance of improved seed in the estimate of agricultural output is further diminished when we

[1] Keatinge, *Agricultural Progress in Western India*, pp. 89-91.

[2] *Vide Keatinge, ibid.* p. 104: "The following table suggests the percentage of increase in crop outturns that might be obtained in various tracts, assuming that good average hardworking cultivators were established on suitable holdings and were in a position to make their agricultural operations reasonably intensive, each cause of the hypothetical increase being credited with its own share in the result."

Determining Factor	Percentage of Crop Increase Obtainable			
	Surat	Jalgaon	Poona	Dharwar
Manure . .	30	30	30	30
Cultivation . .	20	25	30	35
Seed . . .	10	10	10	10
Drainage . .	10	—	—	—
Field Embankment	—	15	15	20
	70	80	85	95

remember that the total area under improved departmental seed and natural spread was, in 1931–32, only 14 million acres, or about 6 per cent of the total gross area.[1] Assuming that the effect of using improved seed is to increase yield by 10 per cent, this would make for an increase of only ·6 per cent in the agricultural output of the country.[2] Moreover, periodical resettlements of land revenue in one district or another, at any rate in the temporarily settled areas, furnish a valuable preventive to serious inaccuracies in estimates of standard yield. Under the circumstances, we may hazard the opinion that estimates of standard yield are not, after all, quite so unrepresentative of actual normal yields as may have been suggested in the Bowley-Robertson Report.

As regards the seasonal factor, it is admitted that

[1] Appendix I. *Review of Agricultural Operations in India* 1931–32 and 1932–33. Details are as under:

	Acres in 000's
Wheat	5,325
Cotton	3,264
Sugarcane	1,627
Paddy	1,591
Jute	971
Groundnuts	881
Grain	227
Millets	123
Potatoes	8
Other crops	377
Total	14,394

[2] "That production has increased is beyond doubt; some part of this increase is due to the enhancement of yield resulting from the expansion of irrigation but a far larger part is due to the spread of cultivation. Only a small proportion of it can be attributed to the introduction of higher yielding varieties of crops and it is doubtful if any appreciable increase in yield can be attributed to the adoption of better methods of cultivation or the increased use of manures." — *Agricultural Commission's Report*, pp. 13-14.

"the estimate is a visual one and, of all the three factors which enter into the estimate of crop yield, is that which is most difficult to arrive at satisfactorily".[1] From an examination of the figures for cotton for the ten years ending 1932–33, we find that the forecasted yield was consistently lower than the sums of domestic consumption and exports, and the difference varied from a minimum of 5 per cent to a maximum of 33 per cent.[2] If the same is true of other crops — and in a sense cotton is a representative crop, as it is grown all over India and has two harvesting seasons — it appears probable that the official statistics of outturn of the principal crops contain an appreciable element of underestimation.[3] In view of the variation in the error from year to

[1] *Report of the Royal Commission on Agriculture*, p. 608.

[2] Details are as follows:

	Cotton
1923–24	13 per cent
1924–25	16 ,,
1925–26	5 ,,
1926–27	12 ,,
1927–28	5 ,,
1928–29	17 ,,
1929–30	33 ,,
1930–31	29 ,,
1931–32	17 ,,
1932–33	25 ,,

[3] For jute, a less representative crop, consumption plus exports figures issued by the Indian Jute Mills Association for the same period showed an excess over crop forecasts by 6 to 34 per cent, the average rate of excess being 14 per cent. Details are as under:

1923–24	− 34
1924–25	+ 13
1925–26	+ 19
1926–27	+ 14
1927–28	+ 9
1928–29	+ 6
1929–30	+ 12
1930–31	− 10
1931–32	+ 18
1932–33	+ 24

year, and of the fundamental importance of seasonal conditions in determining agricultural output, it is desirable to compile the annual average over a number of years of the figures of agricultural output. We shall, accordingly prepare two alternative figures of agricultural output for inclusion in our figure of the National Income, one the actual forecast for 1931–32,[1] the other the annual average of the forecasts for the years 1923–24 to 1932–33; both of these outputs will be valued on the basis of the prices of 1931–32.

Finally, we come to the question of prices. We have preferred to value agricultural output at harvest prices, as harvest prices correspond to value at the place of production. It is particularly important that we should use the figures of value at the place of production, as a considerable proportion of the food crops is consumed by the cultivator himself and his family, while in many places, the wages of agricultural labour are paid in kind.[2] We may also note that in a discussion of the value of agricultural output in the official " Review of the Trade of India ", harvest prices have been used for the purposes of valuation. Indeed in a vast country like India, where prices differ from province to

[1] It may be pointed out, however, that in point of outturn, the year 1931–32 was a normal year. Cf.: " The spring crops of 1931 gave fairly good yields. The monsoon of that year was, on the whole, well-distributed. The season was fairly favourable to the autumn crops also."—*Estimates of Area and Yield of Principal Crops in India, 1931–1932*, p. 51.

[2] In his elaborate inquiry into " Prices in India ", made in 1913, Mr. S. K. Datta, points out that nearly two-thirds of food grains are grown for consumption and not for sale. Though there has been some progress towards a monetary economy since then, it is still true that a substantial portion of the output of food grains is not sold for cash.

province, it would be hazardous to use an all-India wholesale price for any crop, especially for food grains. But even in the use of harvest prices our statistical material is such that we cannot claim consistency. For the following crops, details of harvest prices by different provinces are available, viz. rice, wheat, jowar, grain, bajra, barley, maize, sugar, tobacco, jute, linseed, rape and mustard, seasamum and groundnut.[1] For some of these crops, however, harvest prices are not reported for provinces where they are not grown on a sufficiently large scale, and the average of the harvest prices for the reporting areas has been used to evaluate their produce. The area covered by this procedure is 14 million acres, as against 195 million acres for the produce of which we have statistics of harvest prices. No records of harvest prices are available for tea, coffee, castor, indigo and rubber. The area covered by these crops is only 1·5 million acres, and we have been compelled to use wholesale prices for valuing their output.

We may now proceed to the actual calculation. To begin with, we give in Table 13 the quantity and value of the agricultural output of British India on the basis of the final estimates of area and yield

[1] We obtain our figures from Table VII of the *Agricultural Statistics of India*, vol. i. for the year 1931–32, except for cotton, groundnut and sugar for Madras for which we had direct recourse to the provincial Season and Crop report. The figures given in the Table are median averages of the quotations for the different districts. For Assam and Central Province, there is a note to the effect that the figures represent wholesale market prices. But as these wholesale prices are reported for the different districts by the same authority as reports harvest prices in the other provinces and, further, the provincial figure is a median average of such quotations, we feel justified in using them in conjunction with the harvest prices of the other provinces.

for 1931–32 given in *Estimates of Area and Yield of Principal Crops in India, 1932–33*, and of harvest prices given in *Agricultural Statistics of India*, vol. i, 1931–32. Details by Provinces are given in Appendix B.

TABLE 13

(Figures in Thousands)

Crop	Area (Acres)	Output	Value (Rs.)
Foodcrops :			
Rice . . .	80,299	31,649 tons	296,77,26
Wheat . .	25,107	7,258 ,,	49,05,63
Jowar . .	21,575	4,525 ,,	26,80,50
Gram . .	15,869	3,734 ,,	22,04,54
Bajra . . .	13,928	2,235 ,,	13,37,92
Barley . .	6,384	2,388 ,,	12,24,50
Maize . .	6,092	2,263 ,,	10,87,17
Sugar . .	2,852	3,790 ,,	50,25,28
Oilseeds :			
Groundnut . .	4,196	1,890 ,,	16,39,00
Seasamum . .	4,549	387 ,,	5,99,23
Rape and Mustard .	6,126	1,012 ,,	11,24,00
Linseed . .	2,804	374 ,,	3,65,00
Castor . .	509	64 ,,	88,00
Fibres :			
Cotton . .	14,484	2,429 bales of 400 lbs.	26,52,00
Jute . . .	1,845	5,522 lbs.	11,40,00
Others :			
Tea . . .	722	363,550 ,,	15,83,00
Coffee . .	81	17,357 ,,	1,09,00
Tobacco . .	1,144	597 tons	22,11,01
Indigo . .	53	10 cwts.	27,18
Rubber . .	125	9,200 lbs.	27,14
Total .	208,744	—	597,07,36

The figures of area and yield given in this table are not quite complete. As we have already pointed

out, there are certain areas for which no returns are made, and estimates of yield from such area in British India are furnished by the Director-General of Statistics in his introductory note to *Estimates of Area and Yield* for the year 1923–24. Details are given in the following table:

TABLE 14

Crop	Yield (000's tons)	Percentage Addition to be Made to Value of Agricultural Output as given in Table 13
Rice . . .	335	1·22
Wheat . .	1	·01
Sugarcane . .	28	·86
Linseed . .	3	·69
Rape and Mustard .	14	1·24
Seasamum . .	1	·26

The figures of output in column 3 of Table 13 are obtained by the Department on the basis of the formula *Standard yield* × *seasonal factor* × *area under cultivation*. The *Standard yields* used for the purpose, however, have been taken from the quinquennial report on the average yield per acre for the period ending 1926–27. In 1935 there was published the corresponding report for the period ending 1931–32, and as we believe these figures to be more accurate than those published in 1929, we have revised the official estimates of yield for the year 1931–32 on the basis of the *standard yields* given in the quinquennial report for the period ending 1931–32. The percentage additions — or subtractions from, as the case may be — to the output and value of the crops as given in Table 13 on account of this factor are given below:

TABLE 15

Crop	Standard Yield (Average for British India) in lbs as Given in the Quinquennial Report for the Period		Percentage Difference Between the Figures in Cols. 2 and 3
	Ending 1926–27	Ending 1931–32	
Rice (cleaned) .	969	988	+ 1·96
Wheat . .	816	811	– 0·61
Sugarcane (Gur) .	2780	2956	+ 6·33
Jute . . .	1323	1452	+ 9·75
Linseed . .	389	403	+ 3·60
Rape and Mustard .	529	539	+ 1·90
Seasamum . .	256	258	+ 0·78
Barley . .	1037	1029	– 0·77
Jowar . .	630	626	– 0·63
Bajra . . .	453	452	– 0·22
Maize . .	940	933	– 0·74
Grain . .	717	685	– 4·46
Tobacco . .	1565	1179	–24·66

We can now compute the value and quantity of the output of principal agricultural commodities in British India in 1931–32 on the basis of the figures given in Tables 13, 14 and 15. For purposes of comparison, we also give in Table 16 the annual average of the value and quantity of these commodities for the decennial period ending 1932–33, the figures of output being obtained from the *Estimates of Area and Yield of Principal Crops in India.*

The value of the crops grown on the remaining 52 million acres is not included in our table. 42 million acres are sown with the 'other crops',[1] the principal items being 'other foodgrains including pulses', 30 million acres, and 'fruits and vegetables including root crops', 5 million acres. It is obviously difficult to obtain estimates of either yield

[1] For details, please see footnote 3 on page 57.

or value for these crops. We have been informed that the 'other foodcrops' are not financially so important and that the gross value per acre of the

TABLE 16

QUANTITY AND VALUE OF AGRICULTURAL OUTPUT

(Figures in Lakhs. A Lakh = 100,000)

Commodity	For the Year 1931–32		Decennial Average for Period Ending 1932–33	
	Quantity (tons)	Value (Rs.)	Quantity (tons)	Value (Rs.)
Foodcrops:				
Rice	326·6	30,628	301·3	28,143
Wheat	72·2	4,876	74·6	4,998
Jowar	45·0	2,664	46·8	2,765
Gram	35·7	2,106	35·8	2,107
Bajra *	22·4	1,353	22·2	1,368
Barley	23·7	1,215	24·8	1,259
Maize	22·5	1,079	21·2	1,017
Sugar	40·7	5,389	31·6	4,195
Oilseeds:				
Groundnut	18·9	1,639	19·7	1,680
Seasamum *	3·9	605	4·0	592
Rape and Mustard	10·4	1,160	10·3	1,155
Linseed	3·9	381	3·8	373
Castor	·6	88	·6	84
Fibres:				
Cotton	5·1	3,103	6·9	4,199
Jute	11·7	1,350	17·4	2,015
Others:				
Tea	1·6	1,503	1·6	1,567
Coffee	·1	109	·1	91
Indigo	·005	27	·008	48
Rubber	·4	27	·5	32
Tobacco	4·5	1,590	5·9	2,104
Grand Total	—	60,892	—	59,792

* The greater value of 22·2 lakhs of tons of bajra in column 5 as compared with that of the 22·4 lakhs of tons in column 3 is due to a different provincial distribution (and therefore of harvest prices) of the total; similar considerations explain the apparent discrepancy between the value figures of seasamum given in columns 3 and 5.

area on which these crops are grown is less than that of the area on which the principal foodcrops are cultivated, and that probably the proportion is 4 : 5.[1] On the other hand, from such material as is available in published village studies, it is certain that the gross value per acre of the area under fruits and vegetables is several times larger than that of the area under foodgrains, and it appears probable that the proportion is 6 : 1. The value per acre of the area under oilseeds is three-fourths of that under foodcrops, while the corresponding figure for the area under fibres is almost the same as the one for foodcrops. In order to arrive at a figure of the composite average value per acre of the area under 'other crops', we take the value of the component crops in terms of the value per acre of the area under foodcrops as given above, and weight them according to the area under 'other foodgrains', 'other oilseeds', 'other fibres' and 'fruits and vegetables', condiments and spices being counted in with 'fruits and vegetables', and miscellaneous crops with 'other foodgrains'. These calculations are made separately for each province and the results are tabulated on page opposite.

The addition to be made on account of the area under 'other crops' is thus Rs. 1747 millions. By the very nature of the case, this figure cannot claim the same accuracy as the estimate for the value of that part of agricultural output for which details of both output and price are known.

There still remain the 10 million acres which are under fodder crops. The entire output of fodder

[1] This figure was arrived at in a discussion with the Principal of the Agricultural College at Cawnpore.

TABLE 17

(Figures in Thousands)

Province	Other Food-grains and Foodcrops (Acres)	Other Oil-seeds (Acres)	Other Fibres (Acres)	Fruits and Vegetables Including Root Crops (Acres)	Condiments and Spices (Acres)	Miscellaneous Crops (Acres)	Total Area under Other Crops (Acres)	Value per Acre of Area under Foodcrops (Rs.)	Value of Produce of Total Area under Other Crops (Rs.)
Assam . . .	213	—	—	414	—	156	783	27·8	77,256
Bengal . . .	1,375	44	64	772	136	107	2,498	39·5	265,875
Bihar and Orissa . .	5,713	329	26	653	65	353	7,139	33·4	315,062
Bombay . . .	3,213	247	110	256	219	559	4,604	21·4	131,888
Burma . . .	776	18	1	1,098	97	314	2,304	22·7	182,894
Central Provinces . .	5,452	341	95	121	112	3	6,124	18·1	110,645
Madras . . .	7,108	692	149	741	728	299	9,717	41·2	326,180
N.W.F. . . .	170	—	1	22	7	3	203	17·9	5,603
Punjab . . .	1,714	1	55	284	63	16	2,133	14·0	49,308
United Provinces . .	6,711	34	184	522	157	12	7,620	28·9	278,972
Other areas . . .	59	—	1	13	10	1	84	17·0	3,179
Grand Total .	32,504	1,706	686	4,896	1,594	1,823	43,208	—	1,746,862

crops is consumed by Indian livestock and its value figures as a debit item when calculating the net value of livestock products. Fodder crops are hardly grown for sale, the cultivator using the output of fodder for feeding his draught and milch cattle. Moreover, practically no figures are available of either the yield per acre or the price per unit weight, making it thus impossible to work out a reasonable figure of the value per acre of the area under fodder crops. Under the circumstances, we have not attempted to estimate the value of fodder crops grown in British India. By refraining from valuing this item, we avoid producing a figure with a large element of error without at the same time affecting the validity of our estimate of National Income. We have, for similar reasons, not attempted to value the outturn of stalks and straw available as a by-product from areas growing foodgrains and foodcrops of different kinds. We may add that these omissions, while they do not affect the estimated value of agricultural and livestock products taken together, tend to understate the value of agricultural products taken by themselves and overstate that of livestock products taken separately.

The gross value of agricultural production, excluding fodder crops, stalks and straw, amounted to Rs. 7836 millions in 1931–32. To arrive at the net value, we have to make deductions on the following counts :

(*a*) Wastage.
(*b*) Seeds.
(*c*) Interest on agricultural debt.
(*d*) Maintenance and depreciation of draught cattle.

(*e*) Repairs and depreciation of ploughs and other agricultural implements.

There is no doubt that a part of the estimated output of agricultural produce goes to waste and is neither sold nor consumed. Insects, rats and wild animals all take their toll from the poor Indian peasant. The Royal Commission on Agriculture pointed out that the extent of the damage to crops from wild animals alone was quite considerable, the estimated direct loss to Bombay Presidency being put at Rs. 70 lakhs while it " is probably as great in the United Provinces and even greater in the Central Provinces ".[1] The Famine Commission of 1880 put the estimated loss from wastage at 5 per cent, while the Famine Commission of 1900 put it at 4·7 per cent. We made inquiries on the subject from provincial Directors of Agriculture; and on the basis of the replies we received from the officers of three provinces, it appears that the percentage of loss on account of wastage would be in the neighbourhood of 3 per cent.[2] On the whole, we would not be far wrong in assuming that 3 per cent of the

[1] Report, p. 121.

[2] The Deputy Director of Agriculture, Northern Division Bombay Presidency, referring to wastage in storage stated that " the chief items which cause it are insects and rats, and it can be roughly estimated that the maximum damage in several crops would not exceed 5 per cent at the most ". The Director of Agriculture, Bihar and Orissa, estimated the percentage loss at 2 for rice, and jowar, 1 for bajra, 5 for wheat, barley, gram and tobacco, and 0·5 for some of the oilseeds. The Director of Agriculture, Madras, estimated the wastage to rice, bajra and ragi at 2 to 10 per cent, to the other millets at 2 to 5 per cent, to groundnuts at 5 to 10 per cent, to maize at 2 to 3 per cent and to gram at 3 per cent. The Director of Agriculture, Assam, pointed out that " it is extremely difficult to give any opinion regarding wastage with any degree of accuracy as no special investigation has been done by my department ". The Directors of Agriculture of the other provinces did not reply.

estimated output is lost through wastage. This would mean a deduction of Rs. 235 millions.

A part of the output has to be set off against seed. The Famine Commission of 1880 estimated the percentage of output used as seed at 6·8, while the Famine Commission of 1900 put the same at 6·2 per cent. On an examination of the replies we received on the subject of seed rate per acre from the Directors of Agriculture of Madras, Bombay, the United Provinces of Agra and Oudh, Bihar and Orissa, and Assam, we have concluded that it will not be far off the mark if we allow 6 per cent as the proportion of the harvest to be set off against seed. The deduction on this account is therefore Rs. 470 millions.

Interest on agricultural debt has to be deducted, in so far as the debt was incurred for purposes of current needs of agriculture or for improvements made in the past. The Central Banking Enquiry Committee, basing its conclusion on the results of the special inquiries made by the different Provincial Banking Committees, estimated the total agricultural debt of British India at Rs. 9000 millions. Assuming that two-thirds of this debt was incurred for agricultural purposes and that the average rate of interest was 9 per cent, we have to set off against the gross value of agricultural production Rs. 540 millions on this account.[1]

As regards the expenses of the maintenance of draught cattle, in so far as they were fed with specially grown fodder crops or with stalks and

[1] These assumptions, viz. that two-thirds of the debt was incurred for agricultural purposes, and that the average rate of interest was 9 per cent are in general conformity with the conclusions reached by the Banking Committee on the subject.

straw or cotton seed, no deduction is necessary, as these items have not been included in the gross value of agricultural production. The deductions necessary to be made are in respect of the oil cakes and foodgrain fed to cattle. The number of draught cattle in British India in 1931–32 was, at a maximum, 57 millions consisting of 47 million bullocks, 4·6 million bulls, and 5·5 million male buffaloes. The Royal Commission on Agriculture, in Appendix IV to their report, give estimates received from various parts of India of the quantities and values of both the roughage and concentrates required to feed a pair of bullocks. On a careful examination of the figures obtained from the Agricultural Departments, the Commission concluded, " If nothing is allowed for the value of the roughage grown or collected by the cultivator, and a price is attached only to concentrated foods such as grain and oil cakes, the outlay per pair of bullocks is estimated to range from nothing at all to about Rs. 110. A common figure would be Rs. 40 to Rs. 80 according to the work done." [1] This figure, however, was based on the prices of 1927. By 1931, prices of foodgrains had fallen on an average by 50 per cent, and that of oilseeds by 40 per cent. Taking both these into account, we may reduce the Royal Commission's estimate by 45 per cent. The money outlay on maintenance per pair of bullocks would then be Rs. 22 to Rs. 44 in 1931. From estimates received from some agents of the All India Village Industries Association, it appears that a common figure would be nearer Rs. 22 than Rs. 44. Moreover, the value of the concentrates indicated

[1] Report, p. 194.

by the Commission includes cotton seeds, which we will have to exclude from our calculations. Taking also into account the fact that the Commission were perhaps more influenced by what the cultivator ought to, or would like to spend, than by what he actually spends, we may conclude that on an average, he spends on foodgrains and oil cakes Rs. 30 per year per pair of bullocks. But this figure cannot be applied to the 57 million draught cattle in order to calculate the expenses of their upkeep from the point of view of the agricultural industry. All these cattle are not in fact draught cattle, for some are kept for breeding purposes, some are used as cart-animals and some others are allowed to fend for themselves and die of old age and partial starvation. In view of this and also the fact that the net cropped area was only 229 million acres, we can assume that only 40 million cattle or 20 million pairs of bullocks were actually employed in cultivation.[1] The deduction to be made on account of the expenses of upkeep of draught cattle thus comes to Rs. 600 millions.

As regards interest on the purchase price of cattle which the Commission specifically mentions as an expense,[2] we have already allowed for it under (*c*). With regard to depreciation, no special allowance is necessary, as, taking the agricultural community as a whole, there is a more or less

[1] Cf. the *Report of the Royal Commission on Agriculture*, p. 194: "We are more likely to understate than to overstate the case if we conclude that, for British India as a whole, a pair of bullocks suffices for the tillage of not more than ten acres of the land sown in any year".

[2] *Vide* the Commission's report, p. 194: "To the cost of feeding there must be added interest on purchase price and a figure for depreciation in value, which, in the case of a young pair of bullocks costing Rs. 200, would add to the cost of feeding a sum of not less than Rs. 25 per annum".

natural replacement of old cattle, who retire or die, by new entrants ; [1] while the value of net increments to stock is taken into account in the next chapter in conjunction with other livestock products.

As regards the expense of repairs and replacements of agricultural implements, it is again very difficult to secure any accurate data ; and we have to take recourse to such information as is available in the published rural studies.[2] It appears that besides the plough, the important agricultural implements are the spade, the leveller, and the water-bag, in addition, of course, to a number of minor implements.[3] The number of ploughs in British India is officially estimated at 25·5 millions on the results of special censuses carried out in the different provinces.[4] The Royal Commission on Agriculture in India points out that "the indigenous plough, consisting of a wooden frame and iron share, costs Rs. 5 to Rs. 6."[5] The ploughs are light in construction, made of easily obtainable material, and, on an average, require to be replaced every two or three years. From our study of village surveys, it appears that carpenters and blacksmiths are usually paid

[1] Cf. Principal Low of the Cawnpore Agricultural College in a letter to the writer: "The percentage of casualties from natural deaths, contagious diseases and slaughtering is the same as the percentage of births".

[2] The series of village inquiries conducted by the Punjab Board of Economic Inquiry, the village surveys instituted at the instance of the Madras Banking Enquiry Committee, the studies of villages in the Bombay Presidency by Dr. Mann and Mr. Muktyar have all been useful to us in this connection.

[3] A complete list is given in Mr. Muktyar's *Study of a South Gujrat Village*, pp. 140-144, and in the survey of three East Godavari villages, published in the Appendices to the *Report of the Madras Banking Enquiry Committee*, p. 94.

[4] Table 5, *Agricultural Statistics of India*, vol. i. 1931–32.

[5] Report, p. 108.

Rs. 1–4–0 each per plough per year,[1] in some places they are given some 16 to 24 lbs. of grain instead, which comes to about the same money value.[2] This would make the annual cost of ploughs alone Rs. 32 million. The remaining agricultural implements, particularly the water bag, are more valuable, though their annual cost is not proportionately greater, as they last longer. We may, therefore, add to the annual cost of ploughs an equivalent amount on account of these implements. This gives us a figure of Rs. 64 millions as the annual expense of repairs and replacement of agricultural implements. If we accept the figure given in one of the Madras village studies of Rs. 25 as the value of all agricultural implements per holding, and if we assume that 60 per cent of the 42 million cultivating owners and tenants recorded in the census returns represent the number of holdings, that would give Rs. 625 millions as the value of agricultural implements in British India.[3] Our figure of Rs. 64 million as the annual expense of repairs and depreciation, then, is a little more than 10 per cent of the value of the

[1] *E.g.*, in the villages of Ramachendrepur, Pedapalle, and Pevikevi in the Madras Presidency.

[2] *E.g.*, in the villages surveyed by the Punjab Board of Economic Inquiry.

[3] On the assumption of an average family of 4, we would get 68 million heads of families in India, but the number is probably only 60 millions, as the existence of the joint family system, particularly in the rural areas, makes for a larger congregation of individuals in families, other than immediate blood relations; the number of occupied persons is roughly 100 millions. That would give a proportion of 60 per cent of families to every 100 of occupied persons. That is why we assume that the number of holdings is represented by only 60 per cent of the number of cultivating owners and tenants. The figure of 25 million agricultural holdings which we thus arrive at is also consistent with the official estimates of the number of ploughs in the country.

implements and is perhaps an underestimate. But it must not be forgotten that a large number of holdings are of very small size, the owners of which probably do not own agricultural implements other than mere ploughs.

We can now sum up the value of the items that have to be deducted from the gross value of agricultural production. Wastage accounts for Rs. 235 millions, seeds for Rs. 470 millions, interest for Rs. 540 millions, maintenance and depreciation of draught cattle for Rs. 600 millions, and repairs and depreciation of agricultural implements for Rs. 64 millions. The several items make up a total of Rs. 1909 millions. Deducting this amount from the gross value of agricultural production, we get Rs. 5927 millions as the net value of agricultural production.[1] This net value represents the sum of the incomes of 62·8 million persons who obtain their earnings from agriculture as their principal occupation, of 8·9 millions who are their working dependants and of 4·8 million persons who follow agriculture as an occupation subsidiary to their principal occupation.[2]

[1] If we adopt the annual average of the figures of agricultural output for the period 1923–24 and 1932–33, we get the net value of agricultural output at Rs. 5528 millions.

[2] We may also note that the 66·2 million persons who return agriculture as their main occupation are made up of the following diverse classes:

	(Figures in Millions)
Non-cultivating owners	2·3
Estate agents, managers of owners rent-collectors, clerks, etc.	0·2
Cultivating owners	18·2
Tenant cultivators	23·5
Nomadic cultivators	·6
Agricultural labourers	20·2

No details by classes are available for the 1·2 million persons who were engaged in the cultivation of special crops such as tea, coffee, rubber, pan-vine, etc., or were market gardeners or flower and fruit growers.

Assuming that the earnings of a working dependant, as also of one who follows agriculture as a subsidiary occupation, is one-third of that of one who follows it as his principal occupation, that gives an income of Rs. 90 per head for an agricultural worker. It must be remembered that this figure excludes the value of fodder crops and of straw and stalk which together make up a considerable amount. Moreover, the figure is unduly depressed on account of the very low level of agricultural prices prevalent in 1931–32.

In the next chapter, we shall proceed to calculate the output and value of milk, meat and other live-stock products.

CHAPTER V

QUANTITY AND VALUE OF LIVESTOCK PRODUCTS

LIVESTOCK products, as commonly understood, include the following items :

(1) Power employed in agriculture.
(1) ,, ,, carting.
(2) Manure.
(3) Milk.
(4) Meat, bones, tips, horns, etc.
(5) Hides and skins.
(6) Bones.
(7) Wool.
(8) Increment to stock.

Both cattle power and farmyard manure contribute to the production of agricultural commodities and have already been included in the value of the agricultural output calculated in Chapter IV. It is not, therefore, necessary now separately to evaluate items (1) and (2). Regarding the other items, it may be pointed out that no official returns are published of either the output or the value of milk, meat or any of the other livestock products. The only official figures that are published relate merely to the number of different classes of animals. A quinquennial census of livestock is taken in all the provinces of British India,[1] and the results are to be found in Table V of *Agricultural Statistics of India*, vol. i. The figures are fairly reliable for the

[1] In Burma and the Central Provinces, the census is taken every year.

purposes of our inquiry.[1] The last quinquennial census was taken in 1929–30, while our calculations pertain to the year 1931–32. We have, therefore, brought the figures of 1929–30 up to date on the assumption that the same annual rate of increase (or decrease) for the different classes of livestock as took place in the period 1924–25 to 1929–30 held good also for the year 1930–31. The following table gives details for both the years :

TABLE 18
(Figures in Thousands)

Description	Number in 1929–30	Annual Rate of Increase (+) or Decrease (−) during the Quinquennium ending 1929–30	Estimated Number in 1931–32
Bulls . . .	4,641	+ 132	4,773
Cows . . .	38,008	+ 177	38,185
Bullocks . . .	47,001	+ 307	47,308
Young stock . .	31,723	+ 175	31,898
Male buffaloes . .	5,531	+ 29	5,560
Cow buffaloes . .	14,695	+ 116	14,811
Buffalo calves . .	11,163	+ 132	11,295
Sheep . . .	25,286	+ 468	25,754
Goats . . .	35,601	− 670	34,931

The figures given in column 4 in the preceding table will be used as the basis for our subsequent calculations. We now proceed to items (3) to (8) *seriatim*.

Milk

Cows and cow-buffaloes would normally be expected to form the milk-yielding stock of the

[1] Cf. *The Report of the Royal Commission on Agriculture*, p. 126 : "We recognise that there are imperfections in the published figures, but we believe they are sufficiently reliable to deserve careful analysis by those responsible for cattle improvement". And the Commission based a good part of their own conclusions on these figures.

country; and with 52·7 millions of these animals (38 million cows and 14·7 million cow-buffaloes) one would expect India to be a land overflowing with milk, if not honey. Unfortunately, numbers are no indication of output. "The cattle population of India is the largest, the most dense per acre of cultivated area and per person, and probably one of the least efficient in the world."[1] Mr. G. F. Keatinge is no less emphatic. "As compared with the dairy farmer in Europe the Indian dairy farmer is at a disadvantage from the fact that *cows and buffaloes in India give far less milk than is given by any cow whose existence would be tolerated in Europe*"[2] (italics ours). In fact, cows in India are not really kept as milk-yielding animals. "The she-buffalo rather than the cow", points out the Royal Commission on Agriculture, "is the milk-producing animal of India."[3] The Imperial

[1] *Vide* Duckham, *Animal Husbandry in the British Empire*, p. 200.

[2] *Agricultural Progress in Western India*, p. 115.

[3] Report, p. 196. They point out in another place that "it is the number of she-buffaloes, not the number of cows, that has to be taken into account when seeking an index of the milk production of a province". Further confirmation of the greater importance attached to the buffalo rather than the cow as the producer of milk is afforded by the fact that Mr. Kothawala, now Imperial Dairy Expert, found in his survey of cattle in Bombay City that 96 per cent of them were buffaloes, while Dr. Mann in a similar survey for the city of Poona found 80 per cent of the cattle kept by Gowlis to be buffaloes; a survey of the Madras Dairy Trade carried out in 1917 gave 60 as the corresponding percentage for that city. Agents of the All India Village Industries Association whom we addressed on the subject agreed that the cow was not noted as a milk-yielding animal. This opinion was confirmed by Prof. V. G. Gokhale of the Poona Agricultural College in the course of a long discussion the writer had with him on the subject. Also cf. H. M. Leake, sometime Director of Agriculture in the United Provinces, "a very small proportion of the 60 million adult female bovine stock produce milk. That supply is drawn only from animals which give more than enough milk to support their own offspring." *The Agricultural Journal of India*, 1923.

Animal Husbandry Expert admitted in a letter to the writer, " It is quite true that large numbers of the cows maintained in India are not regarded as milk animals ", while Principal Low of the Cawnpore Agricultural College wrote, " It is a fact that a large number of cows in India produces only so much milk as is hardly sufficient for their young ones ". It should not be imagined, however, that the Indian people are entirely foolish in maintaining these cattle. Merely the force of religious custom does not explain the survival of these uneconomical animals.[1] " The cow in India ", points out Lt.-Col. Matson, " is kept mainly for bearing calves which can be reared for the plough while buffaloes are kept for producing milk." [2] " A cow is prized much ", runs an old Punjabi saying, " when she drops a male calf." Another sets out even more clearly the relative position of cow and buffalo in the rural economy. " When fortune favours, buffaloes drop female calves and cows male calves." The conclusion cannot be escaped that only a small proportion of the cows in India furnish milk that is available for human consumption.

[1] Discussing this question of why very large numbers of cows are maintained in spite of their negligible milk yield, the Royal Commission on Agriculture concluded " the census figures support the view that it is the demand for good bullocks, and the poor average quality of cattle which lead breeders to keep many more cows than should be necessary to provide the number of bullocks for draught ". Report, pp. 183-84.

[2] *The Agricultural Journal of India*, 1922. Also cf. Mr. Nilananda Chatterjee, Hon. Secy. of the All India Cow Conference Association, in his *The Condition of Cattle in India*: " The cattle of the United Provinces, the Central Provinces and Central India are more noted for their capacity as draught animals rather than as copious milkers. . . . It is worth noting that in the Punjab, the United Provinces and the Bombay Presidency, the cow is valued more as the potential mother of bullocks, than as a good milker."

We tried to obtain some idea of the number of such cows which make no contribution to the national output of milk. The Principal of the Cawnpore Agricultural College stated in a letter to the writer, that the "number of cows per 1000 which give less than 3 seers of milk per day, *i.e.* hardly sufficient for the young one, is 937". 14 out of the 48 agents of the All India Village Industries Association, to whom we had, *inter alia*, referred this question as well, dealt with it in their replies; and 7 placed the number at 80 per cent, two above 60 per cent and three above 20 per cent.[1]

It would be useful to quote here from one of the more lucid statements received on this subject. Mr. L. Sundararaj Iengar, L.Ag., of Kuppam, South India, wrote, "the number of cows per thousand which yield no milk at all or the owner does not take milk from may be taken as 800 to 850. Only a small proportion is maintained by sentimental considerations but most of the cows are maintained mainly for ploughing the fields and producing good he-calves."[2] It would be unjust to

[1] From some of the answers it appears that the question was misunderstood to mean the percentage of barren or old cows maintained purely out of sentiment, whereas my question referred to cows not giving surplus milk that could be available for human consumption. Thus one correspondent wrote, "the number of old, crippled or barren cows yielding no milk is small, say 5 per 1000. The religious sentiment against selling cows to butchers is still there. But poverty has taken away a good deal of its strength and when, nowadays, the cultivator finds that he cannot afford any more to maintain such cattle, he silently passes them to other hands and shuts his eyes as to whither the cows are led."

[2] We add two more quotations. From Erandol: "The number of cows per 1000 which yield no milk or are not milked may be about 925. Nearly 35 per cent of them on an average are kept alive on account of sentiment, 50 per cent for manure, 7 per cent for bulls and 8 per cent for milk. In forest villages, nearly 90 per cent are kept

the Indian cow, however, if we were not to make honourable mention of such good milkers as the Hansi, the Hissar, the Multani, the Montgomery and the Gir breeds. It is not the absence of good cattle so much as lack of food that is responsible for the low milk-yielding capacity of the Indian cow. Be that as it may, the fact remains that large numbers of them do not add to the nation's milk supply and the proportion of such cows as yield no milk or are not milked, is probably, on a conservative estimate, between 60 and 70 per cent. The buffaloes, on the other hand, are generally recognized as good milkers, and incidentally, they are better fed than their unfortunate but more sacred cousins. In fact, the buffalo, which is distinguished by a rather unprepossessing appearance—Indian tradition pictures Yama, the God of Death, as always riding a buffalo when at work—and is not much known in the West, was recently commended to the attention of the world in a paper read to the tenth International Dairy Congress by the Imperial Dairy Expert to the Government of India.[1] We may therefore assume that 100 per cent of the Indian

for manure and the remaining for milk and bulls; but very rarely for sentiment. The figures given above are not based on actual record. It is our guess which we think may be nearly correct." From Naupet: "Owing to economic unstability of the ryot, he is even compelled to yoke the cows to the plough. Ploughing with the cow does not adversely affect milk production. Be it so, the average cow is stunted in growth, about $3\frac{1}{2}$ feet high. The average maximum yield per head of milch cow is less than a seer. Even cows of this description are not innumerable. Cows of the above description pervade the country at 15 per cent of their species. It can be safely said that 85 in 100 do give no milk at all. This is quite true a state of things in these parts."

[1] Held at Rome in 1935. The paper included a number of photographs of the animal.

she-buffaloes are milk yielders.

It is more difficult to make any careful estimate of average yield. Information on the subject was requested from the Livestock Experts, Directors of Agriculture of the various Provinces, and the different Agents of the All India Village Industries Association. Official and non-official sources were thus persecuted with equal impartiality. In addition, a special form — *vide* Appendix A — with columns for the number of cows and buffaloes, daily yield, period of lactation, etc., formed part of the returns used in the village inquiries conducted in the Karnatak and the United Provinces at the writer's instance. The information so variously collected has been analysed and tabulated in Appendix C. In order to arrive at the annual yield of milk, one has to take into account both the periods of lactation and the interval between two calvings, and the following formula was employed to determine the yield per animal :

$$\frac{\text{Average yield per day} \times \text{number of days of lactation}}{\text{Number of days intervening between two calvings}} \times 360.$$

The official figures varied for the different provinces. The Deputy Director of Agriculture, Central Division, Bombay Presidency, furnished us with detailed figures for his five districts which showed a range of 360 lbs. to 576 lbs. per cow, and 800 lbs. to 900 lbs. per buffalo. The Livestock Expert of the same province, Mr. E. G. Bruen, estimated the yield, per lactation period, of village cows at 400 to 800 lbs., and of village buffaloes at 1800 to 2000 lbs. From the Principal of the Cawnpore Agricultural College came an estimate of 2000 lbs. for the Desi cows (one of the finer special milch

breeds) and 2300 lbs. for the Desi buffalo. The Director of Agriculture of the Punjab — the province which has the finest stock of milch cattle and the best available grazing in India — gave as his estimate of annual yield the figure of 1500 lbs. for the cow, and of 2500 lbs for the buffalo. The Director of Agriculture, Assam, opined that the average milk yield of cows in Assam was about 2 lbs. per day and that of buffaloes 4 to 5 lbs. The Director of Agriculture, Bihar and Orissa, quoted from Milne's *Note on Cattle in Bihar and Orissa* (1914) to show that the daily yield per cow varied from ·5 to 1·5 lbs. in two divisions, 1 to 4 lbs. in Bihar, and actually reached 8 lbs. in one district; while for the local buffaloes the yield varied from 2 lbs. to 6 lbs. a day. Taking all the official estimates together, the buffalo appears to yield anywhere between 900 and 2500 lbs. a year, while the cow showed an inclination to range between 360 and 2000 lbs. a year.[1]

Eleven Agents of the All India Village Industries Association gave estimates of the milk yield of buffaloes, varying between 320 lbs. and 2500 lbs. a year; 4 of the estimates were below 500 lbs., 2 between 500 and 1000, 4 between 1000 and 1500, and one at 2500 lbs. For the cow there were 13 replies, showing a variation of 90 lbs. to 1200 lbs.; 7 of the estimates were below 500 lbs. a year, 5 between 500 and 1000 lbs. and one at 1200 lbs. The results of the village inquiries conducted in Karnatak showed a variation of 274 to 1010 lbs. in the average

[1] It must be pointed out that special breeds of milch cattle such as the Murrah buffaloes and the Montgomery cows give larger yields, but they do not constitute the common type.

yield of cow per village, while for buffaloes, the figure varied between 630 and 2768 lbs. For the villages surveyed at our request in the United Provinces, the corresponding figures were 90 to 684 lbs. per cow, and 360 to 1216 lbs. per buffalo. It appears that according to non-official estimates, the milk yield per cow varies between 100 and 1000 lbs., and that for the buffalo from 400 to 2500 lbs.

It is easy to see how difficult it is to compile any estimates of average yield; and much will depend upon the investigator's judgement. With a courage possibly worthy of a better cause, the writer proceeded to assume that on the whole, and perhaps erring on the optimistic side, the average yield of milk per cow may be placed at 500 to 750 lbs. a year, and that per buffalo at 1500 to 2000 lbs.[1] Applying these figures to the number of milch cattle, we get the following results:

TABLE 19

	In millions of lbs.
Cow's milk (assuming that 30 per cent are milked) . .	5,728 — 8,592
Cow's milk (assuming that 40 per cent are milked) . .	7,636 — 11,454
Buffalo's milk . . .	22,217 — 29,623
Total output of milk . .	27,945 — 41,077

We may adopt the mean figure of 34,511 million lbs. a year as the output of milk from cows and buffaloes that is available for human consumption, noting that it possibly contains an error of 20 per

[1] The reader familiar with Indian conditions may be more inclined to agree to these figures if he remembers that they imply a daily yield of $1\frac{1}{4}$ to $1\frac{7}{8}$ seers for the cow, during a lactation period of 200 days in a year, while for the buffalo the corresponding figures would be $2\frac{1}{4}$ to $3\frac{1}{8}$ seers per day, during a lactation period of 300 days in a year.

cent. To this must be added an estimate of the milk yield of Indian goats. In many parts of the country, as the Royal Commission on Agriculture points out,[1] the goat is the poor man's cow; but literature on the subject of goats in India is not particularly abundant. An investigator in the Punjab, however, found that the goat has a lactation period of $2\frac{1}{2}$ months and yields about 30 seers of milk during that period; quite a number of goats gave no milk at all.[2] Recent milk-marketing surveys have shown that the daily milk yield of this animal varies from 2 oz. in Bihar and Orissa to 12 oz. in south-western Punjab and Sind, the average for India being about 7 oz. The lactation periods vary from 120 to 150 days.[3] Applying these figures to the total number of goats in India, we can estimate the supply of goat's milk at about 2065 million lbs.[4] Adding this to our previous figure, we get 36,576 million lbs. as the estimated output of milk in British India that is available for human consumption.

We may approach the same problem from a different angle. Milk is a food of national use involving no sectarian or provincial prejudices; and one may obtain a reasonable idea of production from statistics of consumption in different parts of the country. Some scattered information on this subject is available in published form. It was decided

[1] Report, p. 175. In many parts of the country, however, the chief value of goats lies in the dung, goatherds being paid so much per night for resting their goats on the farm.

[2] Mr. Sher Singh in his economic survey of the village of Naggal in the Ambala district.

[3] *Vide* Dr. Wright's *Report on the Development of the Cattle and Dairy Industries of India*, p. 146.

[4] Actually, the estimate of milk yield per goat varies from 52·5 lbs. to 65·6 lbs. per year. I have taken an average figure of 59 lbs.

to supplement this by more recent data, and Health Officers of different Indian municipalities were requested to pass on to the writer any estimates they may have made of milk consumption in their municipal areas. 27 officers rose to the occasion, and their replies are tabulated in Appendix D. The data pertained to widely distant parts of the country and covered an urban population of nearly 2 millions. The consumption per head naturally showed a good deal of variation, the lowest being ·03 lb. per day in Kyaiklat, and the highest 0·78 in Ahmedabad. 7 towns showed a *per capita* consumption of more than ·3 lb., 6 towns of between ·2 and ·3 lb., 7 towns of between ·1 lb. and ·2 lb., while 8 had a consumption of less than ·1 lb. per head; the average consumption per head for the combined populations of the 27 towns was ·32 lb. a day. It is interesting to note that the special and elaborate inquiry, carried out by the Punjab Board of Economic Inquiry, into the milk supply of Lahore in 1930, gave a *per capita* consumption of ·26 lb. a day;[1] while the results of previous special inquiries made in some Indian towns by Dr. Mann, Mr. G. R. Blackwood, Dr. L. S. Joshi, etc., indicated an average consumption of about the same amount.[2] The Royal Commission

[1] Publication No. 28 of the Board.

[2] Details are given below. The figures refer to the decade 1911–21 and are taken from Dr. Joshi's *The Problem of Milk Supply in Indian Cities*:

Bombay	0·27 lb.
Calcutta	0·26 ,,
Delhi	0·23 ,,
Ahmedabad	0·24 ,,
Poona	0·21 ,,
Surat	0·26 ,,
Sholapur	0·13 ,,
Hubli	0·16 ,,

on Agriculture was of opinion that between 7 and 8 gallons per head was probably an ordinary amount for cities, which works out at 67 to 76 lbs. per year, or ·18 to ·21 lb. per day. On the whole, we are fairly safe in estimating the *per capita* consumption of the urban population at between ·2 to ·3 lb. a day. Applying these figures to the number of urban population, we estimate urban milk consumption at 2168 to 3252 million lbs. It is not clear, however, whether this includes the consumption of milk products like ghee, curds, etc. On a review of more complete data now available for some other municipalities, it appears that the *per capita* consumption of milk, including the milk equivalent of milk products, would be 50 per cent higher than the figure of ·2 to ·3 lb. given above. On this basis, urban milk consumption is estimated to be between 3252 to 4336 million lbs.

Statistics on the subject of rural consumption of milk are more difficult to obtain. It is generally believed that more milk is consumed per head in the villages than in the towns and the statistics of consumption available for the six villages in the Punjab, the economic condition of which has been investigated by the Punjab Board of Economic Inquiry, seem to lend support to this view, four of the six villages showing an average consumption of 1 lb. a day, one of 1·6 lbs., and one of as much as 2·1 lbs.[1]

[1] Details are as under:

	In lbs.
Gajjar Bhana, Amritsar district	1·0
Gijhi, Rohtak district	2·1
Tehong, Gulhundur district	1·0
Kala Gaddi Thamman, Lyallpur District	1·6
Naggal, Ambala district	0·9
Gajjin Chak, Gujranwala district	1·1

But it should not be forgotten that these figures are not actual figures of consumption, but are inferred from estimates of available supply; they must therefore include milk exported to the towns either in liquid form or in the form of ghee and other milk products. If allowance is made for this factor, the *per capita* consumption of milk in the majority of these villages would be less than 1 lb. a day. A recent survey of the rates of food consumption of a select class of rural population in the Punjab like tenant cultivators showed that the *per capita* consumption did not exceed 1·2 lbs. a day.[1] When it is remembered that villages are inhabited by a large number of agricultural labourers and members of the so-called untouchable castes,[2] it is obvious that the *per capita* figure of consumption for the rural population as a whole must be less than 1 lb. a day. Moreover, Punjab figures of consumption are certainly not representative of all-India conditions. The Punjab has an admittedly richer stock of milch cattle than the other provinces and also possesses better grazing facilities.[3] In fact, the *per capita* consumption of milk in the Punjab has been placed by Sir John Megaw at more than three times the

[1] S. Lal and W. Roberts, *Rates of Food Consumption by 71 Families of Tenant Cultivators in the Khanewal Tashil, Multan District.* Punjab Board of Economic Inquiry, Publication No. 29.

[2] One of my students, Mr. R. H. Mulla of Karnatak College, Dharwar, investigating the question of consumption of milk and meat in the Adargunchi Village visited the untouchable locality in the village; I may now quote from his letter. "They are not the consumers of milk. When I asked an untouchable woman how much milk she consumed, she replied, 'It is only the mother's milk which I drank when a child; not since then!'"

[3] Of the total area of 10 million acres returned as under fodder crops, 4·6 million acres or more than 45 per cent were located in the Punjab.

corresponding figure for the rest of India, while the recent Provincial Marketing Surveys tend to confirm that proportion. There is also other evidence available to show that the figures of consumption for the remaining provinces are much lower than for the Punjab. Consumption statistics collected at the writer's request from some villages in the United Provinces and in the Karnatak gave a maximum figure of only ·66 lb., the minimum actually reaching the numerically negligible level of 0·01 lb. in a village in the United Provinces.[1] For Madras, a dietary survey was carried out in two villages near Chinglepet and Trichnopoly by Dr. W. R. Aykroyd and Mr. B. G. Krishnan ; and it was found that milk and milk products were entirely absent from the diets of 31 out of the 44 families investigated, while the average milk consumption of the remaining 13 families was less than 3 oz. per day.[2] The survey was repeated for one of the villages after six months and the intake of milk products was not noticeably larger than that recorded in the previous investigation.[3] Taking all these facts into consideration, we

[1] Details are as under :

Name of Village	District	Population	Aggregate Cons. (In lbs.)	Cons. per Head (In lbs.)
Muravalli .	Dharwar	330	68	0·2
Adargunchi .	,,	663	104	0·16
Budhial .	,,	166	36	0·22
Gevanhal .	Bijapur	229	152	0·66
Bhumra .	Bulandshahr	78	17·5	0·22
Gopalpur .	Bareilly	99	2·2	0·05
Dhara Buzurg	Gorakhpur	96	1	0·01
Shyam Darwa	,,	88	1·3	0·02

[2] *Indian Journal of Medical Research*, January 1937.

[3] " 13 out of the 25 families examined consumed no milk products at all. 5 more consumed less than 1 oz. per consumption unit daily of milk or curds." *Indian Journal of Medical Research*, July 1937.

estimate the rural consumption of milk and milk products in India at a daily average of ·3 to ·4 lb. per head. Applying these figures to the rural population, we may estimate rural milk consumption at 29,741 to 39,654 million lbs. That gives a total milk consumption, including both urban and rural areas, of between 32,993 and 43,990 million lbs. We may adopt the mean figure of 38,491 million lbs. noting that it contains a possible error of ±20 per cent.

The two alternative estimates, then, are as under : [1]

TABLE 20

	In millions of lbs.	Error
Aggregate milk produced, exclusive of that not available for human consumption .	36,576	±20%
Aggregate milk consumed . . .	38,491	±20%

The two figures, which have been calculated by independent methods, reveal a substantial measure of agreement. We therefore proceed to adopt an intermediate figure of 37,534 millions as our estimate of the amount of milk produced in British India, the possible margin of error being placed at ±25 per cent. It may be noted that a semi-official estimate submitted to the Official Agricultural Conference at Pusa puts the output of milk at a much higher figure.

[1] It is necessary to remind our readers that our production figures are exclusive of the milk that is not available for human consumption. If that had been included, production figures would have been much higher than consumption figures—which is usually the case in such estimates. But we deliberately refrained from calculating this item, as it does not form a part of the net figure of our National Income.

In a note on the "Assessment of the Annual Contribution of Livestock in India to Indian Economy", by Col. Sir Arthur Olver and Rao Bahadur M. Vaidyanathan, the annual consumption of milk and dairy products was estimated at 39 million tons of milk for the whole of India. The estimate was based on a consumption of 24 gallons of milk per head per annum and would give British India an aggregate consumption of 61,902 million lbs., which is 65 per cent more than our figure and 32 per cent more than the possible maximum by our calculations. It may perhaps not be out of place to mention here that Col. Olver's figures were prepared in the course of his thesis pleading for a greater expenditure of Government funds on the Animal Husbandry Department and are based on decidedly less adequate data. There is no doubt that they contain an appreciable element of over-estimation.[1] A more authoritative estimate is made by Dr. Wright in his *Report on the Development of the Cattle and Dairy Industries in India*. On the basis of the recent provincial marketing surveys of milk and milk-products Dr. Wright estimates the total milk supply of the whole of India at 690 million maunds or 56,580 million

[1] The Officiating Secretary to the Imperial Council of Agricultural Research, in response to a request from the writer for information on the subject of milk yields, wrote "From an indirect estimate made from investigations regarding consumption of milk and dairy products in India the most probable average production appears to be 1120 lbs. of milk per animal per annum for cows and buffaloes together". That would mean a production of 59,000 million lbs. for British India. This, however, is probably inclusive of that part of the output of milk which is fed to the calves and is not therefore available for human consumption. If allowance is made for this factor, the figure of milk available for human consumption as based on the Secretary's letter will not be appreciably higher than our estimate.

lbs.[1] But British India has only 73 per cent of the total number of cows and 73 per cent of the total number of cow-buffaloes in India. Assuming that there is no material difference in the yield of milch cattle in British India and in Indian States, we get 41,303 million lbs. as the official estimate of the milk supply available for human consumption in British India. This figure exceeds our estimate by less than 10 per cent and is well within the maximum possible output by our calculations. We may therefore accept our estimate of milk supply as a substantially correct version of the actual situation, and reduce the margin of error to ±10 per cent.

For valuing the nation's output of milk, we have to adopt a weighted average of urban and rural prices. Milk in towns sells at 8 lbs. to the rupee, while in villages it sells or has a selling value of about 13 lbs. to the rupee. Giving the weights of 8 and 1 to rural and urban prices (according to the proportion of rural and urban milk consumption), we get an average of 12·5 lbs. to the rupee or a little less than 1·3 annas per lb. of milk. Col. Sir Arthur Olver and Mr. Vaidyanathan, in their valuation of

[1] Details are as under:

	Maunds of Milk Equivalent (millions)
Liquid milk	215·0
Ghee	364·0
Khoa	52·2
Other indigenous milk-products	16·7
Dahi (curd)	26·2
Butter	10·3
Cream	2·8
Ice-cream	2·8
Total	690·0

p. 160. Dr. Wright's Report.

milk supply, adopted the figure of 1·5 annas per lb.,[1] but prices in 1931 were lower than when they made their calculation and we may retain our figure. On the basis of 12·5 lbs. to the rupee, the value of milk production would come to Rs. 3003 millions or in round figures Rs. 3000 millions.[2]

In order to arrive at the net value of the milk produced, the money expense of the maintenance of milch cattle will have to be deducted from this figure of Rs. 3000 millions. No deduction is necessary for the expense of straw, stalks, grass, etc., as the value of these items has been deliberately excluded from our calculation of agricultural output. The item to be deducted is the cost of concentrates, *i.e.* of oil cakes and of grain fed to cattle. It is very difficult to obtain reliable data on this subject. There is no doubt that the expense incurred on this account is very much lower than in the west, for the Indian cultivator feeds his milch cattle with concentrates only when they are in milk and then, too, only to a small extent, as he cannot afford to buy them. From the replies received by us from some correspondents,[3] it appears that including medicine and salt, the annual cost per head of both cows and buffaloes taken together would be somewhere in the neighbourhood of Rs. 20 to Rs. 22.[4]

[1] I was informed by Rao Bahadur Vaidyanathan that this value per lb. was the average of provincial prices weighted on the basis of population figures.

[2] Milk prices have fallen substantially since 1931–32, for which year these calculations are made. The value of the same output would probably be not very much in excess of Rs. 2200 millions to-day.

[3] Mainly Agents of the All India Village Industries Association.

[4] The average cost of such concentrates fed to buffaloes was of course much higher than that given to cows.

Adopting these figures, the cost for all milk-yielding cattle would work out at Rs. 560 to 616 millions. We can obtain a rough check on this figure from a study on the cost of milk production at Lyallpur by Messrs. Johnston and Kartar Singh.[1] The cost of concentrates and salt was found to be 26·4 annas per every 100 lbs. of milk produced;[2] calculating on this basis, the cost of concentrates and salt for the 35,469 million lbs. of cows' and buffaloes' milk would be Rs. 585 millions. To be on the safe side, however, we may adopt a figure of Rs. 600 millions as the expense incurred on this account. The net value of milk production thus comes to Rs. 2400 millions.

Meat, Blood, Horns, Tips, etc.

Official statistics of the output of meat and other by-products of slaughter are conspicuous by their entire absence; and an estimate has to be built up to replace this long-existing lacuna in the data for calculating Indian Income. From a study of published village surveys, supplemented by personal inquiries on the subject, it became clear that meat consumption is very largely confined to urban areas. Not only is Hindu sentiment stronger in Indian villages; the villager is too poor to afford meat except as an occasional luxury. In the cities and towns, on the other hand, the Hindu inhabitant takes more readily to non-vegetarian food than his rural brother, while Christians and Europeans

[1] Publication No. 25 (Rural Section) of the Punjab Board of Economic Inquiry.

[2] Report, p. 6. The records relate to the year 1930–31.

represent a big demand. The Hindu villager never eats beef; even the Muhammadan villager consumes beef and mutton only on festive occasions. If statistics of urban meat production could be obtained, it would go a long way to providing an estimate of the national output of meat; and the writer accordingly set out to do so.

Most of the Indian municipalities which permit slaughter in their areas do so only in licensed slaughter-houses. A circular letter was therefore sent to the Health Officers of the city municipalities and the chief officers of the other municipalities requesting them to supply us with classified statistics of the slaughter of cattle, goats and sheep in the areas under their jurisdiction. The response was quite encouraging. One officer sent me his congratulations and the good wishes of his entire staff; he also sent me the statistics in *Urdu*. Another apprehended that full attention to my statistics may tell on their tax collections, as the financial year was fast approaching to its close; and counselled patience; while a third rather unkindly suggested a monetary remuneration for the labour involved in collecting the figures.[1] A few municipalities had no slaughter-houses and forbade slaughter within their jurisdiction. But there were 77 replies which contained statistics of slaughter for both the years 1931–32 and 1934–35, the combined population of

[1] I cannot help quoting. "I regret that the labour involved is too great to be done gratuitously, as extra staff will have to be employed to extract out the information required by you. I estimate that it will cost approximately Rs. 100 and in case you are prepared to meet the expenditure and provided also that the information is available on this office record, I will be glad to help you in the matter." We regret that we could not make use of this well-meant offer.

the municipalities concerned being 6·8 millions.[1] The number of cattle slaughtered in 1931–32, was 363,000 and that of goats and sheep was 3,025,000. The proportion of cattle slaughtered in 1931–32 to that in 1934–35 was 98·9 per cent, the corresponding figure for goats and sheep being 89·1 per cent. Details of relevant figures are to be found in Appendix E.

Encouraged by this, we sent out another circular letter to the remaining 675 municipalities, requesting to be supplied with statistics of slaughter for at least the then current year just drawn to its close, viz. 1934–35. No less than 116 replies were received to this second appeal. The population covered was 3·24 millions, the number of cattle slaughtered was 268,000 and that of goats and sheep 1,470,000. Details are given in Appendix F.

These figures can be used in compiling an estimate of the number of cattle and goats and sheep slaughtered per head of the urban population, which can be used to get an estimate of the urban output of meat. Before doing so, account will also have to be taken of the municipalities having no slaughter houses, and presumably therefore either consuming no meat or obtaining their meat supplies from neighbouring towns. Replies were received from the officers of 24 such towns comprising a population of 276,000, details of which are given in Appendix G. We can now proceed to our calculation. In 1934–35, for an urban population of 10·3 millions living in 214 towns and cities situated at widely varying

[1] We had to omit from our totals the figure for Jhansi (population 65,000) as the reply did not distinguish between cattle and goats and sheep. The total number of animals slaughtered in that town was 24,301 in 1931–32 and 28,663 in 1934–35.

distances,[1] the number of cattle slaughtered was 635,000 and that of goats and sheep 4,864,000. Applying to these figures the proportions we obtained for slaughter in 1931–32 for the 77 towns (population, 6·8 millions), we get for an urban population of 10·3 millions the following figures of slaughter in 1931–32:

Number of cattle . .	628,000
Number of goats and sheep .	4,334,000

The entire urban population in 1931–32 was returned at 29·7 millions. Assuming that the number of cattle, goats and sheep slaughtered per head of the 10·3 million urban residents for whom we have obtained statistics is the same also for the remaining 19·4 millions,[2] we get 1,811,000 as the number of cattle slaughtered in the towns and cities of British India, and 12,497,000 as that of goats and sheep. An addition of 5 per cent may be made to these

[1] The provincial distribution of the replies containing the required statistics is as under. The maximum possible number of replies is given in column 3.

Province	No. of Replies	No. of Possible Replies
Assam . .	5	26
Bengal . .	20	117
Bihar and Orissa .	16	61
Bombay . .	45	154
Burma . .	10	57
Central Provinces .	32	74
Madras . .	40	81
Punjab . .	21	107
United Provinces .	25	85
Total . .	214	767

[2] Our sample, if such an expression can be used, is very large indeed, covering more than one-third of the entire field and is reasonably well distributed among the different provinces.

figures to cover slaughter carried on outside the licensed slaughter-houses. At an average rate of 100 lbs. to a head of cattle slaughtered and 24 lbs. per goat or sheep, this would represent a total output of meat of 505 million lbs. of which 190 million lbs. would be beef and the rest mutton.

We may now turn to rural consumption. Beyond the general facts we set forth at the beginning of this section, there is not much statistical data available on the subject. The only information we could get pertains to the six villages, studies of which are published by the Punjab Board of Economic Enquiry and the seven villages already referred to which were surveyed at our request. The average consumption per head for the six Punjab villages came to 1 lb. a year, that for the four villages in the United Provinces to 1·2 lbs., and that for the three Karnatak villages to an insignificant figure.[1] In fact, even in a village like Gajjan Chak (Gujranwala) where the population consisted exclusively of Muhammadans and Christians, the consumption of meat per head came to less than 4 lbs. a year; while in another village in the United Provinces, where all the families but one consumed meat, the average consumption came to a little more than 3 lbs. a year. And there are whole parts of the country where no meat is consumed at all. In fact, the Muhammadans kill goats only on festive occasions such as marriages when the whole community gets a feast; while certain sections of the

[1] In the village of Gevanhal (Bijapur), only one family consumed meat and that too only 2 or 3 times a year on festive occasions. In Budihal, only one family consumed meat and that about 4 to 6 times in a year.

Hindus, notably the Marathas, consume mutton on the rare occasions when they sacrifice a goat to the family goddess in fulfilment of a vow or to greet the appearance of a particularly bountiful harvest.[1] On the whole, it would not be an underestimate to assume a consumption of 1 lb. of mutton per head per year for the entire rural population. This would mean a rural consumption of 242 million lbs. of mutton and imply a slaughter of 10,083,000 goats and sheep. To this we may add the figure of 50 million lbs. for beef on the assumption that on the average one head of cattle is slaughtered per year in each of the 500,000 villages in British India, mostly in celebration of the Muhammadan 'Id festival. That gives us a total rural consumption of 292 million lbs. of meat, of which beef accounts for only 50 million lbs. The significantly lower place which beef occupies in rural meat consumption as compared to that in the towns, is not only a result of the greater Hindu character of village India; it is perhaps also a partial explanation of why communal riots have not so far disfigured the fair face of the Indian countryside. We can now sum up the results of our calculations:

TABLE 21

	(In Millions of lbs.)		Representing a Slaughter of	
	Mutton	Beef	Cattle (in oo's)	Sheep and Goats (in ooo's)
Estimated urban production .	315	190	1,902	13,122
Estimated rural consumption .	242	50	500	10,083
Grand Total .	557	240	2,402	23,205

[1] Mr. Mulla's investigation into the consumption of meat in Muravalli (District Dharwar) lends support to this view.

It is possible to obtain an alternative figure of the number of cattle, goats and sheep slaughtered in the year. A special inquiry was made by Mr. Y. R. Gaitonde into the village tanning industry in the Bombay Presidency, in the course of which he collected statistics of the number of animals slaughtered in the province. The results of his inquiry have been published by the Department of Industry as a monograph and relate to the year 1926. Mr. Gaitonde found that in that year, 172,000 cattle and 2,200,000 goats and sheep were slaughtered in the Presidency. The quinquennial census of livestock taken in 1925–26 gave the number of cattle in the province as 10,805,000 and that of goats and sheep as 6,250,000. The proportion of cattle slaughtered to those in existence thus came to 1·5 per cent while the corresponding figure for goats and sheep was 35 per cent. If we apply these average rates of slaughter to the entire cattle population of British India and of sheep and goats, we get the following results :

TABLE 22

(Figures in Thousands)

	Estimated Number of Slaughtered on the Basis		Difference Between the two Figures
	of Mr. Gaitonde's Figures	of our Estimate of Urban Slaughter and Rural Consumption	
Cattle . . .	2,448	2,402	−2%
Goats and sheep .	21,350	23,205	+9

We sought to obtain another check by requesting Directors of Veterinary Services for information on the average rate of birth and of death for different classes of livestock. No information was forthcoming

as no records are kept on the subject. The Imperial Institute of Veterinary Research, however, had worked out an interesting estimate of the average lives of goats and sheep in response to a special request from the Hides Cess Enquiry Committee (1930). They placed the average lives of goats at 3·6 years and of sheep at 2·8 years, on the basis of which it appears that the number of goats and sheep killed or otherwise meeting their death in 1931–32 would be 20 millions. In estimating the proportion of fallen and slaughtered stock for their inquiry into the output of skins, the Hides Cess Committee stated that " in the case of goats an overwhelmingly large, and in the case of sheep a smaller but still very large proportion, must be derived from animals killed for food.[1] If we assume the proportion of slaughtered stock to total deaths to be 90 per cent, we get 18 million as the number of slaughtered stock. This figure is less than ours by 5 millions and possibly implies an element of exaggeration in our estimate. We are not sure, however, that our figures are an over-estimate. The Institute's estimate of an average life of 3·6 years for the goat as against only 2·8 for the sheep appears to indicate an undue partiality for the former. Even the Hides Cess Committee point out that " the meat animal *par excellence* is the goat " and that " the goat is the usual sacrificial animal among those Hindus who take only sacrificial meat " ;[2] while such separate figures for the slaughter of goats and sheep as we received from the different municipalities amply bears out this conclusion. The goat may by nature be a hardier animal, but is not allowed to enjoy the fruits

[1] Report, p. 51.

[2] *Vide* Report, pp. 50-51.

thereof by man. We suggest that the goat has really a slightly lower expectation of life than 3·6 years,[1] and that would leave our statistics free from the charge of over-estimation.

As regards cattle, the Hides Cess Committee states that "the average life of cattle has been estimated variously at about 4 and 6 years".[2] In another place they point out that the estimates of experts are almost unanimous that for India 'fallen hides form about 75 per cent to 80 per cent' and 'slaughtered hides make up the balance'. On the basis of these figures the number of cattle slaughtered would appear to be between 5·1 and 7·6 millions, as against our estimate of 2·4 millions. The difference exceeds 100 per cent and we are unable to accept the figures which place the average life of cattle at 4 to 6 years. From the answers received by the writer on this question from several Directors of Veterinary Services, and a number of Agents of the All India Village Industries Association, it seems quite clear that the average life of cattle varies from 10 to 15 years, though a number of estimates placed it at an even higher figure.[3] The replies are tabulated in Appendix H. It is, however, likely that the replies, particularly from the Agents of the All India Village Industries Association, did not take into account the greater mortality among the young stock. If we adopt a revised figure of 8 to 10 years as the average life of cattle,

[1] The Superintendent of the Government cattle farm at Hissar stated in a letter to the writer that the average length of life of goats (females) on his farm was between 1 and 3 years.

[2] Report, p. 12.

[3] Almost all the village studies we have looked into adopt similar figures when calculating depreciation on the cultivator's cattle.

the number slaughtered would appear to be between 3·1 and 3·8 millions, as against our estimate of 2·4 millions. It is significant that Col. Sir Arthur Olver and Rao Bahadur M. Vaidyanathan, while adopting 5 years as the average life of cattle, still arrived at a figure of only 3·1 millions as the number slaughtered, though they did this by assuming that "10 per cent of the total annual mortality among cattle are slaughtered for meat". It is possible that our calculations of the output of beef are an under-estimate and that of mutton an over-estimate, but on the whole it appears probable that the range of error in our figures of meat as a whole does not exceed 10 per cent.

Regarding the value of the output of meat, it was found on inquiry that the price of mutton varied between 3 to 5 annas a lb. and of beef from $1\frac{1}{2}$ to 3 annas. Assuming an average price of 4 annas a lb. for mutton, and of $2\frac{1}{4}$ annas a lb. for beef, the value of the output of meat should be Rs. 150 millions.

We must add to this figure the value of by-products of slaughter, such as blood, horns, tips, etc. On the basis of 8 annas per head for small animals and one rupee for big ones, this would come to Rs. 14 millions. The combined value of meat and by-products thus amounts to Rs. 164 millions. It is possible to get an alternative figure of the value of slaughtered livestock. Col. Olver adopted a value of Rs. 10 per head of cattle and Rs. 7 per sheep or goat; and his figures were based upon special inquiries. If we calculate on that basis, the value of the slaughtered livestock, as per our estimates, would come to Rs. 186 millions. We may adopt an intermediate figure of Rs. 175 millions.

Hides and Skins

The Hides Cess Enquiry Committee estimated the value of the total production of raw stock in India at Rs. 188 millions, details being as under :

TABLE 23

	Value in Million Rs.
Raw hides exported	35
Raw hides consumed by Indian tanneries whether finally or for export	70
Raw goat and sheep skins exported	45
Raw goat and sheep skins consumed by the tanning industry for export	30
Raw goat and sheep skins consumed by the Indian tanneries but not exported	8
Total	188

The figures represent the annual average of the three years 1928–30. It can be reasonably assumed that the number of hides and skins produced in 1931–32 is not appreciably different from that of the three preceding years. But in 1931–32, prices of raw hides and skins had fallen by 50 per cent and 30 per cent respectively as compared to the average of prices in 1928–30. The value of raw hides and skins produced in 1931–32 may, therefore, be estimated at Rs. 110 millions. Not all this, however, can be credited to the National Income. The Committee estimates that 15 per cent of the production is wasted on account of not sufficient care being paid to hides and skins when the stock is slaughtered. The net value of hides and skins produced in the whole of India in 1931–32, therefore, comes only to Rs. 95 millions. On the basis of the number of

cattle, sheep and goats in both British India and Indian States, we estimate the share of British India in the net value of hides and skins produced in the entire country at 60 per cent. This works out at Rs. 57 millions.[1]

Bones

The value of bones exported from India in 1931–32 was Rs. 7 millions. It is well known that in India there is a strong prejudice against the use of bone manure; Hindus, for example, seldom using it. Assuming, therefore, an internal consumption of only thrice the amount exported, we get Rs. 28 millions as the value of this item. For British India alone, the value of this item may be placed at Rs. 21 millions.

Wool

The Royal Commission on Agriculture pointed out that sheep in India are of a very poor quality. "They produce at most two pounds of wool annually and the fleece consists of hair rather than wool."[2] Calculating on an average yield of 2 lbs. per head,

[1] The following statement gives the number of animals in British India and in Indian States:

	(Figures in Millions) Cattle	Sheep and Goats
British India . . .	154	61
Indian States . . .	48	32

Roughly speaking, therefore, British India had three times the number of cattle and twice the number of goats and sheep respectively in Indian States. According to the Hides Cess Committee, the value of the output of hides in the whole of India was Rs. 105 lakhs while that of skins was Rs. 83 lakhs. For British India, therefore, the share of the value of both hides and skins comes to about 60 per cent of that for the whole of India.

[2] Report, p. 170.

we get 50 million lbs. as the output of wool in British India. In 1931–32, the wholesale price of wool was Rs. 15–12–0 per maund of 82 lbs. or 3·1 annas per lb. The value of this item, then, would be Rs. 10 millions. In another place, the Commission state that " herdsmen expect to make from 12 annas to a rupee for fleece ".[1] Assuming that herdsmen find it worth while shearing at least 80 per cent of their sheep, the value of wool produced would be between Rs. 15 to Rs. 20 millions. It would be safe to adopt an intermediate figure between these two estimates, and value the output of wool at Rs. 15 millions.

Increment to Stock

In Table 14 we have already given figures of increment of stock by different classes. At the average rates of Rs. 50 for a pair of bullocks, of Rs. 40 for a buffalo, of Rs. 20 for a cow, of Rs. 10 for a calf and of Rs. 7 for goat or sheep,[2] we get Rs. 15 millions as the value of the increment to livestock.

Conclusion

We can now sum up the value of all livestock products. The figures are all of net value, no deduction being made on account of feeding goats and sheep, as in India these animals are allowed mostly to fend for themselves and pick up anything edible that they can. The total net value of livestock products thus comes to Rs. 2,683 millions, subject to

[1] Report, p. 171.

[2] The value figures are based mainly on information received from Agents of the All India Village Industries Association.

an error of ±10 per cent. This total is made up of the following items :

TABLE 24

	Value in Millions of Rs.
Milk	2400
Meat and by-products	175
Hides and skins	57
Bones	21
Wool	15
Increment to stock	15

In India the livestock industry is so inextricably mixed up with the agricultural industry that it is difficult to determine the number of persons whose income was constituted by the net value of livestock products. It may be mentioned, however, that the census returns showed 1·5 million persons as following stock raising as their principal occupation, with ·7 million working dependants, while ·3 million had it as a subsidiary occupation. But a large proportion of the number returned as following agriculture, particularly amongst cultivating owners and tenants, also obtain some income from their livestock which is included in the value figures calculated in this chapter.

In the next chapter, we shall examine in serial order the output and value of fishing and hunting, of forest products, and of minerals.

CHAPTER VI

QUANTITY AND VALUE OF OUTPUT FROM FISHING, HUNTING, FORESTS AND MINES

Fishing

No statistics of either the weight of fish landed or of its value are published by Government. In fact, of the five maritime provinces of Bombay, Madras, Bengal, Bihar and Orissa and Burma, a department of fisheries was maintained only in Madras till very recently when, following upon Mr. Sorley's report on "The Marine Fisheries of the Bombay Presidency", the Bombay Government has started a Fisheries branch in the Industries Department. A diligent search revealed only three sets of serial statistics, viz. of weight of fish brought for curing in Government yards on the east and west coast of Madras, of that brought for curing in the Bombay Presidency and of the weight of fish exported by rail from Bihar and Orissa. In addition, of course, there are the figures of exports of fish from India to foreign countries. It is impossible to aggregate these figures in any sensible manner so as to yield the total weight of fish landed in British India.

In the absence of regular statistics of output, we have had to fall back upon special documents which might offer a basis for a reasonable estimate. For the province of Madras, Bulletin No. 24 of the Madras Fisheries Department contains estimates of

the weight of fish caught on the West Coast (comprising the districts of South Kanara and Malbar) and its value.[1] The same publication also gives the number of fishermen actually employed in fishing and the number of fish curers. It appears from these figures that the average catch per fisherman actually employed in fishing was about 107 maunds, or 3·9 tons, valued at Rs. 168.[2] The figures refer to the year 1927–28. For Bombay, we get an estimate of the total weight of fish landed in the Presidency of 55,000 tons in Mr. Sorley's very able report on Marine Fisheries referred to before. The fish were valued at Rs. 8 millions and the figures pertain to the year 1930–31.[3] As the number of working marine fishermen is estimated at 36,000 in

[1] The bulletin is entitled "Fish Statistics for 1927–28, Supplement to the Administration Report for 1928–29" and was published in 1933. The Director states in his report for 1934–35 that financial necessities of Government had led to the retrenchment of the statistics clerk and, when circumstances permitted his re-engagement, he would complete a survey of fishing-villages on the East Coast. The author discovered a reference to a survey of fishing-villages bordering on the Chilka in the report of the Director of Industries of Bihar and Orissa for 1927–28, but was unable to trace the document.

[2] The relevant figures are given below:

Number of fishermen actually employed *in fishing*	*30,666*
Fish curers	10,367
Total fish caught (1927–28)	3,288,318 mds.
Value of fish caught ,,	Rs. 5,164,071

Statement x. p. 172, and statement I.H. p. 107, Bulletin No. xxiv. Madras Fisheries Department.

[3] Report, p. 15. Details are as under:

	Tons
Sind	5,030
Gogho-Kolak	3,960
Kalai-Arnalla	6,020
Bankot-Redi	18,265
Arnalla-Reydanda	13,975
Majali-Bhatkal	7,775

the same report, the average catch per fisherman was 1·53 tons, valued at Rs. 223. The annual catch per fisherman in Bombay is much less than that of his Madras cousin, but the value per ton of fish is much higher in Bombay. The Madras figures, however, are very variable from year to year, the weight of catch and its value per fisherman being 7 tons and Rs. 256 respectively in 1926–27.[1] The statistics of fish brought for curing in the west coast also show considerable variation from year to year. On the whole, it would be better not to attempt an estimate of the weight of fish landed in British India. The value of fish caught per fisherman may be taken at an average figure of Rs. 200.[2] That gives us Rs. 121 millions as the gross income of the 603,000 persons occupied in the fishing industry. To this may be added 8 per cent to cover the contribution of the 153,000 persons who followed fishing as a subsidiary occupation, on the assumption that the output per subsidiary or part-time worker is one-third of that of a principal or whole-time worker. To arrive at the net value of output of the fishing industry, or the net income of those engaged in it, we must deduct, on a very rough estimate, 15 per cent of the gross value to cover the cost of repair of tackle, nets, boats, etc. The net value of output of the fishing industry can thus be estimated at Rs. 118 millions. It must be pointed out, however, that this figure contains a considerable element of error, probably not exceeding 20 per cent.

As regards persons living on hunting, no data

[1] Quoted in Mr. Sorley's report, p. 15.

[2] Recent inquiries into the incomes of fishermen conducted by me in the course of my work as Secretary of the Bombay Economic and Industrial Survey Committee tend to confirm this figure.

of any kind bearing on their incomes is available. A safe assumption would be to credit them with an average annual income per head of two-thirds of that of fishermen. This gives us Rs. 2 millions as the net income obtained by those engaged in hunting. The total net value of the output of those engaged in fishing and hunting is, therefore, roughly estimated at Rs. 120 millions.

Forests

In refreshing contrast to the items dealt with so far, statistics of the output and value of forest products are ample. The annual statement on *Statistics relating to Forests in British India* issued by the Central Government gives figures of the quantity of timber and fuel produced during the year, the value of minor forest produce, the estimated value of forest produce given away free or at reduced rates, and the quantity and value of exports of forest produce from India. We were able to obtain, through the courtesy of the President, Forest Research Institute at Dehra Dun, a copy of a statement prepared for submission to the Empire Forestry Association and reprinted in the *Indian Forester* of September 1934. This paper contains detailed estimates of the quantity and value of home-grown forest products consumed in the country. Adding to the value of such domestic consumption that of exports of home produce, we get a very accurate idea of the total value of Indian forest produce. This figure worked out at Rs. 99 millions and consisted of the items mentioned in the following table :

TABLE 25

(Figures in Thousands of Rupees)

Description	Home Consumption	Exports	Total of Home Consumption and Exports, *i.e.* Home Production
Timber . . .	47,581	5,661	53,242
Fuel	4,422	—	4,422
Barncrops . . .	1,718	—	1,718
Resin	206	—	206
Catch . . .	671	4,461	5,132
Lac	647	13,933	14,580
Matches . . .	65	—	65
Paper . . .	145	—	145
Fodder . . .	7,006	- -	7,006
Sandal . . .	1,103	1,288	2,391
Other items . . .	—	9,171	9,171
Grand Total .	63,564	34,514	98,078

Details of home consumption by provinces are given in Appendix I. Statistics of the value of exports presumably include also the output of the forests of Indian States; this item will have to be deducted as we are concerned only with the valuation of the income from the forest wealth of British India. In 1931–32 there were 17 million acres under forests in Indian States as against 89 millions in British India Assuming that the value of the exports of forest produce was distributed in the same proportion between British India and Indian States, we get Rs. 5,750,000 as the value of the exports of forest produce from Indian States. Deducting this item, we get Rs. 92,328,000, or, in round figures, Rs. 92 millions as the value of the output of forest produce from British India.

Mines

Statistics of the output and value of minerals can be obtained without any special effort from the

annual publication on the subject. The following table contains figures of the quantity and value of the principal minerals mined in British India in 1931.

TABLE 26

(Figures in Thousands)

Description	Quantity	Value (in Rs.)
Coal (tons)	20,694	78,517
Petroleum (galls.)	305,019	59,135
Salt (tons)	1,839	13,638
Manganese Ore (tons)	347	7,665
Copper Ore (tons)	167	5,497
Silver (ounces)	5,900	5,229
Zinc Ore (tons)	55	2,841
Tin Ore (cwts.)	57	2,111
Mica (cwts.)	39	2,033
Iron Ore (tons)	595	1,278
Saltpetre (cwts.)	123	991
Wolfram (tons)	2	882
Gold (ounces)	0·05	2

The total of mineral produce thus comes to Rs. 180 millions.

The total net value of the output from fishing, hunting, forests and mines is thus estimated at Rs. 392 millions, being made up of the following items :

Fishing and Hunting	Rs. 120 millions
Forest Produce	,, 92 ,,
Minerals	,, 180 ,,

It is not possible to indicate the number of workers whose incomes are covered by these figures, as a part of this value accrues to the State and a part to shareholders and other investors.

We have now completed our inquiry into the net value of the output of all agricultural and allied

occupations in British India. This is estimated at Rs. 9003 millions and represents the combined income of 68·8 million principal workers, 9·7 million working dependants and 5·4 million subsidiary workers, all of whom are engaged in what the census terms the ' Production of Raw Materials '. The *Inventory Method* has thus been employed to estimate their income. We shall now proceed to use the *Income Method* to estimate the incomes of the remaining earners.

CHAPTER VII

INCOMES ASSESSED TO INCOME-TAX

We have by now accounted for the income of the majority of earners in British India. We shall now deal with the incomes of all workers engaged in occupations other than those covered in the three previous chapters as also that of persons having no occupation but living on their income. These numbered 27·9 millions. In addition, there were 4 million working dependants and 5·6 million persons who followed a non-agricultural occupation as subsidiary to their principal ones. As has already been pointed out in Chapter II, it is intended to divide the number of such income earners into two sections, viz. those who pay income-tax and who, therefore, have each an income of Rs. 1000 a year or more; and those who do not pay income-tax and who, therefore, presumably have incomes of less than Rs. 1000 a year each. For estimating the incomes of the former, we shall make use of income-tax statistics; as regards the incomes of the latter, except for persons returning as their occupation, service under the Government of India, the Provincial Governments, local authorities, Posts and Telegraphs or Railways, we propose to use our estimates of average earnings by workers in each major occupational group. By aggregating the income of both these sections, we get the income of all non-agricultural workers in British India.

In this chapter we deal with the incomes of earners subject to income-tax. It is well known that in India the Income-Tax Act is restricted to taxing incomes arising from occupations other than agriculture. Agricultural income is specifically exempted and is statutorily defined to include the following items :[1]

1. Rent or revenue derived from land used for agricultural purposes.
2. Profits from agriculture.
3. Income derived by the cultivator from processes ordinarily employed by agriculturists to make their produce marketable.
4. Income from the sale of such produce.
5. Income from house-property that is in the vicinity of the land and is needed for purposes of the agricultural profession.

There is no question, therefore, of overlapping or double counting of the incomes treated so far, if we add to the figures compiled hitherto that of the aggregate income assessed to income-tax, except for one item, viz. profits from the exploitation of mineral resources. The value of the output of minerals was calculated in section 3 of the previous chapter and includes wages, salaries, royalties and profits, a part of which must be appearing again in income-tax statistics. It is difficult to obtain an exact idea of what amount this involves, but it appears from Return VI of the All India Income-Tax Report and Returns that the profits of mining companies accounted for 17·9 per cent of

[1] Section 2 (1) and 4 (3) (viii) Income-Tax Act, 1922. A comprehensive discussion of this exemption is to be found in Chapter V of the author's *Taxation of Income in India* (1931).

all corporate profits;[1] this would mean that profits from the exploitation of minerals assessed to income-tax in 1932–33 was Rs. 50·4 millions, and as mining operations were carried on almost wholly by companies, we may safely assume the profits of the mining industry to be Rs. 51 millions. To this we may add 10 per cent of the total salary bill of companies and employers to cover the salaries paid out of the mining industry.[2] This would give a total of Rs. 84 millions as the amount of income arising from the exploitation of minerals, which was subject to income-tax. We have, therefore, to deduct Rs. 84 millions from the aggregate of income assessed to income-tax in 1932–33, in order to avoid double counting.

Though our calculation of Indian Income refers to the year 1931–32, we are using the income-tax statistics of the year 1932–33, because under the Indian Income-Tax Act, the basis of assessment is the income of the previous year. In other words, the income assessed to tax in 1932–33 is the income accruing to the assessees in 1931–32. This does not, of course, apply to salaries, for which the basis of assessment is the current year's income. Income from salaries and interest on securities amounted to Rs. 926 millions in 1931–32, while in 1932–33 they amounted to Rs. 919 millions. The difference is less than one per cent. Moreover, salaries and interest

[1] Actually these figures refer to receipts of super-tax from companies, and therefore take no account of companies with incomes below Rs. 30,000 a year.

[2] The total salary bill of companies and private employers is not given in the Report. It is estimated by us at Rs. 332 millions on the assumption that the average rate of tax paid per employee was the same for all classes of the salariat.

on securities account for less than 40 per cent of the total assessed income. Under the circumstances it seems reasonable to use the income-tax statistics of 1932–33 to describe the economic conditions of 1931–32.

The total income assessed to tax in 1932–33 was Rs. 2245 millions, made up as under :

TABLE 27

	Rs. in Millions
Salaries	756
Interest on securities	170
Profits of companies	234
Profits of registered firms	53
Profits of unregistered firms	123
Income of Hindu undivided families	360
Income of associations of individuals	14
Income of individuals other than from salaries	535

Deducting from this total Rs. 84 millions to cover the income from exploitation of minerals, we get Rs. 2161 millions as the income of persons enjoying an individual income of more than Rs. 1000 each and obtaining it from occupations other than those dealt with in Chapters IV to VI.

The total number of assessees in possession of this income of Rs. 2161 millions is 553,426. This number is not, however, equal to the actual number of persons who pay income-tax and share this income, as a number of assessees are only judicial or legal persons and mean in practice more than one actual person. Thus, *e.g.*, a Hindu undivided family is made up of a number of income earners ; similarly registered firms, unregistered firms and associations of individuals. But what we want to

find, in order to avoid double counting when calculating the incomes of persons in Section 2 referred to in the first part of this chapter, is the number of actual persons paying income-tax and their distribution among the different occupational groups.

The Income-Tax Returns do not contain classified statistics of assessees, though their total number is given. We have, therefore, first, to find the distribution of the total number of assessees among the various groups such as salaried persons, Hindu undivided families, registered firms, etc. An examination of Return X shows that the number of assessees, excluding those whose main source of income was salaries, was 311,898. By deduction from the total number of assessees, we arrive at the figure of 252,536 as the number of salaried persons paying income-tax. As regards Hindu undivided families, unregistered firms and associations of individuals, we find, in Return IV–A, classified statistics, by grades of income, of the amount of income assessed from each of these classes. Assuming that the average income per assessee is the mean of the upper and lower limits of the income in each grade, we get 107,639, 28,723, and 3,921 as the number of Hindu undivided families, unregistered firms and associations of individuals respectively which are assessed to income-tax. Details are to be found in Appendix J. To these figures must be added the number of assessees in each class who pay super-tax, *i.e.* whose individual incomes exceed Rs. 30,000 a year and statistics of whom are given in Return V–A. The following table gives the final estimates of the number of assessees in each class:

TABLE 28

Description	Estimated No of Assessees with Incomes Below Rs 30,000	No of Assessees with Incomes Above Rs 30,000	Estimate of Total No of Assessees (Cols 2 and 3)
Hindu undivided families	107,440	199	107,639
Unregistered firms .	28,465	258	28,723
Associations of individuals . . .	3,866	55	3,921

As for companies, we may take their number as 2355, as this was the number from which, according to Statement X of the All India Income-Tax Report, returns were received showing taxable income. Similar figures are not given for registered firms, but Return No. III of the Report gives the number of partners of registered firms who claimed refund on their share of the tax paid by their firms. The profits of registered firms are taxed at the maximum rate, partners being allowed rebate on the difference between the rates of tax due on their individual incomes and the maximum rate. In 1932–33 there were 4480 such partners with incomes below Rs. 100,000 a year, who obtained a refund of tax of Rs. 1·9 millions out of a total tax of Rs. 7 millions. Allowing an average figure of two partners per firm, we get 2240 as the number of registered firms subject to income-tax. By aggregating all these figures and deducting the sum from the total number of assessees excluding salaried persons, we get the number of income-tax payers other than salaried persons who were *genuine* individuals and taxed as such. Such assessees numbered 156,012 and consisted of business men engaged in industry or trade, owners of house property, lawyers, doctors,

etc. The following table gives figures of the estimated distribution of the 553,426 income-tax payers among the various groups enumerated above.

TABLE 29

Salaried persons	252,536
Hindu undivided families	107,639
Unregistered firms	28,723
Associations of individuals	3,921
Companies	2,355
Registered firms	2,240
Individuals	156,012

We have now to discover the number of actual persons represented by items 2 to 6 in the above table, and, adding it to the sum of items 1 and 7, use the total as an estimate of the number of *genuine* individuals paying income-tax in British India. This number has then to be distributed over the major occupational groups, and, by difference from the census totals of occupied persons, we can obtain the number of occupied persons in each group whose income has to be estimated on the basis of average earnings in the succeeding chapters. The average number of persons returned as occupied in the census tables and having their aggregate income assessed to income-tax has been taken as two per each registered and unregistered firm and association of individuals. As for companies, what is required is not the number of shareholders but the number of persons associated with the management of companies, not being salaried employees or partners of firms, who share in the profits of companies as they must have been counted in the census tables as occupied persons. This number has been taken as two per company. It is more difficult to estimate this multiplier for Hindu undivided families, as a Hindu

undivided family may have from two to perhaps ten or even twelve earning members. On an average, however, it would be reasonable to assume that the number of occupied persons per Hindu undivided family paying income-tax is four. On the basis of these estimates, we get the total number of individuals paying income-tax in British India as 913,582.[1] In other words, out of a total of 27·9 millions engaged in non-agricultural occupations, one in thirty-one had an income exceeding Rs. 1000 a year.

This total of 913,582 income-tax payers has now to be distributed over the major occupational groups, viz. Industry, Trade, Transport, Professions and Liberal Arts, and Public Force and Administration. Except for the salariat, the rest of the assessees are obviously to be assigned to Industry, Trade, and Professions and Liberal Arts. As regards the salaried persons, we find from Return I–A that out of a total of Rs. 40 millions of income-tax assessed on salaries, 21 millions were paid by Government, 1·5 millions by local authorities and 17·6 millions by companies, other public bodies and associations, and private employers. Assuming that the amount of tax paid per person was the same in the case of all these three classes of the salariat, we get as the number of persons paying income-tax in

[1] Details are as under:

Salaried persons . .		252,536
Hindu undivided families	107,639 × 4	430,556
Unregistered firms .	28,723 × 2	57,446
Associations of individuals	3,921 × 2	7,842
Companies . .	2,355 × 2	4,710
Registered firms . .	2,240 × 2	4,480
Individuals . .	—	156,012
Grand total		913,582

the service of Government 132,582, in the service of local authorities 9091, and in the service of companies, other public bodies and associations and private employers 110,863. The first of these three groups comprises not only persons occupied in the service of the State, but also those employees in Railways and Posts and Telegraphs whose incomes exceed Rs. 1000 a year. The last group clearly relates to persons engaged in Industry, Trade and the Professions. The combined total of income-tax payers belonging to these three occupations is 771,909 and may be assigned to the Professions, Industry, and Trade and Transport other than by Rail and Posts and Telegraph services in the proportion of 1 : 10 : 10.[1] The following table gives our estimates of the number of income-tax payers in each group :

TABLE 30

(Figures in Thousands)

Occupation	Estimated No. of Income-Tax Payers	Total Earners in Each Occupation	Estimated No. of Earners with Income Below Rs. 1000
Industry . . .	368	14,592	14,224
Service of Government Railways, Posts and Telegraphs . .	142	1,627	1,485
Trade and other Transport	368	6,454	6,086
Professions and Liberal Arts . . .	37	1,440	1,403
Domestic service . .	Nil	1,861	1,861

[1] The number of principal workers occupied in the Professions and the Liberal Arts was 1·5 millions or less than 10 per cent of those employed in Industry. We have given the same weight to Trade as to Industry, because though the total number of persons occupied in trade and other transport was only 7 millions, the proportion of salaried persons with incomes above the exemption limit, *i.e.* Rs. 1000, is considerably higher among those engaged in trade than in industry.

Column 3 gives statistics of total earners in each group as estimated in Table 4. By deducting the number of income-tax payers from the total of earners, we get our estimate of the number of earners in each group whose incomes are below Rs. 1000 a year. These figures are contained in column 4 of the table and form the basis for the calculations of the subsequent five chapters. In the next chapter we proceed to calculate the incomes of industrial workers whose earnings are below the income-tax minimum of Rs. 1000.

CHAPTER VIII

INCOME OF WORKERS ENGAGED IN INDUSTRY

We have seen in Chapter III that there were 14·6 million persons who obtained their income principally from industry. In addition, there were 1·6 million working dependants, while 2·2 million persons followed industry as a subsidiary occupation. Of the 14·6 million principal workers in industry, we saw in Chapter VII that ·4 million had incomes above Rs. 1000 a year. The income of the remaining 14·2 million industrial workers has to be estimated in this chapter.

In order to do this, it is necessary to classify all industrial workers into urban and rural workers, as the average rate of earnings shows a marked degree of variation as between town and country. It is also desirable to separate the skilled from the unskilled workers, as there is a significant difference in the earnings of these two classes of workers. Further, as far as the urban workers are concerned, we shall have a further classification into workers employed in organized industry and those who are engaged in handicrafts.

In Chapter III we have already estimated the number of urban industrial workers at 4 millions and that of rural industrial workers at 10·5 millions. The proportion of unskilled workers to the total workers must be not less than 30 per cent, as the persons returned under the census head, 'labourers and workmen otherwise unspecified', are likely to be mostly unskilled workers. In addition, a part of

the number returned under ' Industry ' proper must also be unskilled workers. On the whole, therefore, we may estimate the total number of unskilled workers at not less than 40 per cent of the number of all industrial workers. This is inclusive of the unskilled workers who are engaged in organized industry. The total number of workers engaged in organized industry was, according to the Government directory of *Large Industrial Establishments in India in 1931–32*, 1,431,487. Of these, a majority of the workers employed in gins and presses and in flour mills may be regarded as wholly falling within the category of unskilled workers. Of the others, no less than 10 per cent may be regarded as unskilled workers.[1] The total number of unskilled workers employed in registered factories may, therefore, be estimated at 350,000. As all these industrial establishments are located in towns, the 1·4 million workers engaged in organized industry can all be said to be urban workers. The 368,000 income-tax-paying industrial workers are mostly resident in urban areas; to be quite safe, however, we may assign 18,000 to the rural areas, leaving 350,000 to the urban areas. Proceeding on this basis, we give, in Table 31, our estimate of the classified statistics of industrial workers in British India.

The income of the industrial workers who pay income-tax has already been taken into account in the preceding chapter. As for the workers in organized industry, we shall make use of the elaborate *ad hoc* inquiry conducted by us into industrial

[1] In the cotton mills and factories in the Bombay Presidency, 16,330 unskilled labourers were employed out of a total of 255,000 workers. In the engineering industry in the same province, the corresponding figure was 9772 out of a total of 48,271.

TABLE 31
(Figures in Thousands)

	Urban	Rural	Total
Earners with incomes above Rs. 1000 a year . . .	350	18	368
Workers in organized industry .	1,430	—	1,430
Independent artisans and other skilled workers . .	1,047	6,260	7,307
Unskilled workers . . .	1,268	4,219	5,487
Total industrial workers .	4,095	10,497	14,592

earnings already referred to in Chapter II. As for the independent artisans such as weavers, blacksmiths, cobblers, etc., and other skilled workers employed in undertakings which do not employ power, we may point out that they are mostly persons who possess very little capital, and the value of their contribution to the national dividend is equal to the value of their labour services. The value of the raw material used by them has already been counted in. Generally speaking, the social strata to which they belong is the same as that of organized industrial workers; and common experience supports the view that their standard of life is certainly not higher. In fact, wage-earners in factories have more secure employment and obtain a larger average income than the so-called independent artisans. We have also discussed this view with the Directors of Industries in two major Indian provinces and find they are in general agreement. We therefore propose to estimate the average earnings per head of this class of urban workers at a sum lower than that of the workers in organized industry.[1]

[1] Also cf. a similar treatment of the income of independent workers in Bowley and Stamp's *The National Income*.

For estimating the income of the unskilled workers in urban areas, we shall use the figures given in the Administration reports of Chief Inspectors of Factories in different provinces.

As for rural workers engaged in industrial occupations, we shall make use of the estimates of earnings of rural craftsmen found in a number of published village studies, as also the data on the subject specially collected for us in the village inquiries in the United Provinces and in the Karnatak to which repeated reference was made in Chapter V. For unskilled industrial labour in the rural areas, we shall use the information received on the subject from a number of Agents of the All India Village Industries Association and also some statistics of the wages of agricultural labour that are published by Government.

Earnings of Workers in Organized Industry.

It is well known that there is no census of wages in India. Provincial reports on the working of the Indian Factories Act contain a few figures of the monthly wages of some classes of factory workers, but on the evidence of the chief inspectors themselves these statistics are not very reliable, while even if they were, they afford no clue to the earnings of industrial workers, as no classified figures of the latter are available. Here was obviously a field for private statistical enterprise, and this section is based on the results of the rather ambitious attempt at a private wage census carried out by the author in the summer of 1935. We sent a circular letter and two printed forms to all the industrial establishments employing over twenty workers each in India; one

form related to details of the value of industrial output and the other to the number of workers employed, tabulated in a small number of wage groups. The establishments thus dealt with numbered 8143, including concerns run by Government and local authorities — names and addresses having been obtained from *Large Industrial Establishments in India in 1931-32*, a biennial official publication issued in 1934. The number of workers covered by the inquiry was 1·4 million. To the 8143 letters sent by us, we received a little over 700 replies. Of these about 300 were our circular letters and enclosures returned to us through the Dead Letter Office, as the addressees had either left or could not be discovered at the addresses given in the official directory. Nearly 300 replies were regrets and refusals, differing from one another only in the degree of politeness and ingenuity with which they found reasons to avoid answering our questions.[1] One correspondent so completely misunderstood our objective that we have thought it worth while to reproduce his letter as the record of a bright interlude in an otherwise wearisome task of investigation by correspondence.

To the Manager of Gonville and Caius College, Cambridge, Great Britain

SIR,

You send me the cover of papers on 16.7.35. I received them on 18.7.35. I have not understood

[1] One correspondent wrote to us that "He was not in the habit of complying with such requests", while another did not see why he should make his staff work collecting figures for a private investigator when they were already tired of filling in returns for Government.

it detailly. I want to know the details of it. So please send me the prospectus and bye-laws of business. If you send me them, if it is of benefit to me, we are ready to send the orders.

Yours sincerely,

By a curious oversight, the polite writer of this interesting epistle omitted to sign himself, and the author could not pursue the matter any further. We do not know what end has overtaken the remaining 7000 letters which have been neither answered nor returned from the Dead Letter Office, though it is not impossible to make a shrewd guess.

Fortunately 130 replies contained forms which had been filled in. Of these we had to reject 17 forms, as some of them related to Indian States, 3 to technical training schools and others were not understandable. The figures we have used relate to 113 industrial establishments, employing 66,170 workers. The data thus covered more than 4 per cent of the total number employed, returns being received from a little more than 2 per cent of the industrial establishments mentioned in the directory.

Before we proceed to use these statistics, we must discuss the preliminary objection that our results are not a proper sample. They are not, of course, a random sample in the orthodox sense. Random sampling really presupposes complete control over the data, the certainty that the random unit selected for study or approached for examination will respond to the wooing of the investigator. If we had selected, *e.g.*, one in every fifty establishments and sent them our circular letters, we would undoubtedly have saved on postage, but there was

no guarantee that we would have got any greater measure of response than we have now. As it is, with the wide scope of our inquiry, we have not done so badly. Replies have been received from big as well as small establishments; from establishments paying a high average wage to ones paying an unpleasantly low wage. The returns are spread over all the different provinces, and relate to all the principal classes of industry dealt with in the directory, with one regrettable exception.[1] On purely *a priori* grounds one would expect that small employers would be less inclined to respond, and, in fact, they did respond the least, gins and presses being particularly under-represented in our sample. From the point of view of provincial distribution, response from the Central Provinces was most encouraging. Bombay and Madras did well, but Bengal and Burma were decidedly under-represented. After a careful examination of the data from the point of view of size distribution, provincial distribution and distribution by industries, it became evident that the simple average of the wage bill of these 66,170 employees could not be used as a basis for calculating the income of the 1·4 million industrial workers. Weighting was necessary in each case; and has been resorted to for offsetting the deficiencies in the results of our wage-inquiry. Three alternative totals of the wage-bill of organized industry have been accordingly prepared.

First, an attempt was made to analyse the figures with a view to discovering the 'critical size'

[1] In spite of our best efforts and personal interviews with some important people in Calcutta, we could not get a single form filled up and returned to us from any of the jute mills.

beyond which the average wage ceases to rise with an increase in the size of establishment. It was very hard indeed to discover this useful figure. In the case of establishments employing less than 100 persons, wages showed a steady tendency to rise with increase in the size of firm ; in the case of those employing more than 100 but less than 1000 persons wages remained steady for a time, in spite of an increase in size of firm, and then responded ; while for establishments employing more than 1000 persons, wages showed an actual tendency to fall. It was, therefore, decided to separate our data into these three classes and calculate the average wage paid in each class. We then proceeded to find out the size distribution of all the industrial establishments in India by taking a sample of one page in four from the directory. The sample covered 382,037 persons, or nearly 27 per cent of the total number. We reproduce in the following table figures of the average wage and percentage of workers in each size-group in our wage inquiry, and also the percentage of workers in each group in the sample taken from the directory.

TABLE 32

Establishments Employing Persons	Number Employed in Each Group		Percentage of No in Each Group to Total No. of Workers		Average Wage in Each Group according to our Wage Inquiry
	In our Wage Inquiry	In sample taken from Directory	In our Wage Inquiry	In sample taken from Directory	
1–99	4,268	84,985	6·4	22·3	Rs. 206
100–999	16,501	91,393	24·9	23·9	Rs. 288
1000 and more	45,401	205,659	68·7	53·8	Rs. 278

Weighting the figures of average wages in column

6 by the number employed in column 3, we get Rs. 264 as the average wage of all industrial workers in British India. Applying this figure to the total of workers employed, we find the wage-bill of organized industry to be Rs. 378 millions.

Now for a second estimate. The average wage of workers employed in each of the different industrial groups given in the directory was calculated from the data contained in our inquiry; and the results were used to estimate the incomes of the various classes of industrial workers. The total wage bill thus calculated came to Rs. 356 millions. Details are given in the following table:

TABLE 33

Nature of Industry	Average Wage per Worker according to our Inquiry (Rs.)	Total Number Employed in Each Industry	Estimated Wage-bill of Total No. of Workers Employed in Each Group (in 000 Rs.)
Textiles . . .	233	670,309	156,182
Engineering . .	431	229,698	99,000
Minerals and Metals .	485	47,781	23,174
Food, Drink and Tobacco . .	105	181,018	19,007
Chemicals, Dyes, etc. .	235	47,480	11,158
Paper and Printing .	375	43,679	16,380
Processes relating to Wood, Stone and Glass . . .	223	35,946	8,020
Gins and Presses .	114	156,464	17,837
Miscellaneous . .	296	19,112	5,657
Total . .	—	1,431,487	356,415

A remarkable proof of the general accuracy of the figures contained in this table is obtained from the results of the general wage census conducted by the Bombay Labour Office in 1934. The two volumes published so far relate to the engineering

and printing industries, and give the average monthly earnings for all men in these two occupations at Rs. 39–3–10 and Rs. 34–5–6 respectively.[1] The annual figures would work out at Rs. 471 and Rs. 412 respectively, and compare favourably with our figures of Rs. 431 and 375. The difference in each case is less than 10 per cent. When it is remembered that our figures refer not merely to Bombay Presidency, but include also the rest of British India, where wage rates are admittedly lower than in Bombay, the case for accepting the results of our inquiry is seen to be even stronger.

A third possible estimate has been made by us on a provincial analysis of the wage data obtained in our inquiry. We worked out figures of the average wage per head of persons employed in the different provinces, on the basis of which we estimate the total wage-bill at Rs. 369 millions. Details of the table are delegated to a footnote,[2] because we

[1] *Vide* p. 94 of the report on *Wages in the Engineering Industry*, and p. 50 of the report on *Wages in the Printing Industry*. The two reports were published in 1935 and 1936 respectively.

Province	Average Wage per Worker according to our Inquiry (Rs.)	No. of Workers Employed in Each Province	Estimated Wage-bill of Industrial Workers in Each Province (000's Rs.)
Madras . .	305	137,377	41,900
Bombay . .	295	381,349	112,498
Bengal . . .	195	480,439	93,686
United Provinces .	129	93,223	12,026
Punjab and N.W.F. .	434	45,819	19,885
Burma . . .	398	90,812	36,143
Bihar and Orissa .	453	63,959	28,973
Central Provinces .	187	64,386	12,040
Other areas . .	—	30,737	7,899
Assam . . .	93	43,386	4,035
Total . .	—	1,431,487	369,085

desire to enter a strong note of caution against the use of these provincial figures to interpret industrial conditions in the different provinces. The average for Bengal is obviously an under-estimate, as no returns were received from jute mills, which, after all, constitute the backbone of industrial Bengal. That for Bihar and Orissa is explained by the location of the iron and steel industry within its borders, while, even allowing for the dominance of Railway workshops, the figure for Punjab is an over-estimate. That for Burma is based on very inadequate data, as among provinces it was the least represented in the returns. The only averages we are inclined to trust as somewhat indicative of provincial industrial conditions are those for the Central Provinces, Bombay and Madras.

We give below the three alternative estimates we have made of the wage-total of organized industry.

TABLE 34

(Estimates in Millions of Rupees)

(*a*) On the basis of size-distribution . . .	378
(*b*) On the basis of industrial distribution . .	356
(*c*) On the basis of provincial distribution . .	369

The three totals are interestingly near one another, and incline us to believe that the results of our inquiry cannot be far off the mark. It is true that they are all based on the same data, but the method of treatment has been different in each case. Personally we would consider estimate (*c*) the least dependable of the three. Estimate (*a*) has more claims to statistical respectability, but estimate (*b*) has the strongest case; and but for the unfortunate failure of even a few of the owners of jute mills to

comply with our request, it would really not have needed the perhaps not very impressive support of (*a*) and (*c*). But on the assumption that the average wages of workers in jute mills are approximately the same as that of workers in cotton mills — and independent inquiry suggests that this is a reasonable assumption — estimate (*b*), viz. the one based on industrial distribution of the workers for whom we are able to obtain data, should be the nearest to the genuine figure. On the whole, we are inclined to advance a figure of Rs. 360 millions as our estimate of the total wage-bill of organized industry, subject to an error of 10 per cent. That gives an average wage of Rs. 257 per industrial worker.

A way of checking this figure, albeit a very rough one, is by reference to statistics of compensation under the Workmen's Compensation Act. Provincial reports on the working of this Act contain a classified statement of the number of persons to whom compensation was paid by income grades of assumed wage schedule, the assumed wage schedule in which a worker is placed being determined by his approximate monthly earnings for sometime previous to the accident. We collected these figures for the year 1934–35, and obtained the following results :

TABLE 35

Assumed Wage Schedule (per month in Rs.)	No. of Persons Awarded Compensation
Between Rs. 1 and Rs. 10 . .	91
,, 11 ,, 20 . .	304
,, 21 ,, 30 . .	117
,, 31 ,, 40 . .	77
,, 41 ,, 50 . .	29
50 and over	71

It will be seen that the vast majority of workers receiving compensation fell within the monthly income groups of Rs. 11 to 20 and Rs. 21 to 30. The average wage of all the 689 workers covered by these statistics comes to Rs. 303 for the year; this figure, however, cannot be identified with the average wage of the industrial workers as a whole. On the other hand, there are valid reasons which definitely tend to make the average assumed wage of the workman who obtains compensation higher than the average wage of an industrial worker. Among other reasons, we may mention that coolies, openers and other unskilled labourers seldom get involved in accidents; these are also the persons whose monthly earnings are the lowest of all. Secondly, insufficient knowledge on the part of those affected would lead to many persons not claiming compensation, though entitled to do so. Persons of this type are more likely to belong to the less educated and, therefore, the lowest paid of the industrial workers. Moreover, the statistics are a record only of cases settled by the commissioner, and do not include those settled out of court. Usually cases settled out of court relate to the more ignorant and less contentious though lower-paid workers. In the circumstances it seems clear that the average wage of an industrial worker must have been appreciably below Rs. 303 a year. Our estimate places it at Rs. 257. The margin of difference between the two figures is understandable, and in fact lends support to our estimate.

These figures, however, pertain to the year 1935; whereas we have selected for study Indian Income in 1931–32. A rough indication of the movement of wages can be obtained from the

Factory Administration Reports. It appears that on an average wages fell by 10 per cent between 1931 and 1935. The total wage bill of workers in organized industry has, therefore, to be raised to Rs. 400 millions, and the average wage per worker to Rs. 285. The margin of error in this figure will not be in excess of ± 10 per cent.

This figure can also be checked by the statistics of compensation under the Workmen's Compensation Act which we have already used for the year 1935. For the year 1931–32, the relevant statistics are as under :

TABLE 36

Assumed Wage Schedule (per month in Rs.)	No. of Persons Awarded Compensation
Between Rs. 1 and Rs. 10 . .	82
,, 11 ,, 20 . .	379
,, 21 ,, 30 . .	239
,, 31 ,, 40 . .	120
,, 41 ,, 50 . .	50
50 and over	89

The average assumed wage of all the workers receiving compensation amounted to Rs. 328 for the year. Our calculations place it at Rs. 285. The margin of difference between the two figures is easily understandable in the light of the reasons given before, and lends support to our estimate for the year 1931–32.

Income of Independent Artisans and other Skilled Urban Workers

We have seen that the average income of a worker in organized industry may be estimated at Rs. 285

a year or a little more than Rs. 24 a month. We have already pointed out that the income of an independent artisan is, on an average, below that of a worker in organized industry. The income of the one million workers coming under this section is, therefore, below Rs. 24 a month. It is, however, difficult to estimate the proportion by which the artisan's income is below that of the factory worker. It appears on inquiry that the average net monthly income of a weaver or a barber or a washerman, who form the majority of the urban artisan class, rarely exceeds Rs. 20 a month. Further support is lent to this view by the results of an inquiry conducted by us into the earnings of barbers and washermen in the city of Madras last year. Returns of income and expenses were personally collected by us from 24 washermen and 23 barbers in the city of Madras. In addition, an adventurous barber of our acquaintance obtained for us, in return for a small remuneration, returns of net income from 27 of his colleagues in that profession. The distribution of earnings revealed by these returns is given in the following tables :

TABLE 37

MONTHLY EARNINGS OF WASHERMEN

Income Grade	Number	Remarks
Below Rs. 10	3	Gross income of 24 washermen, Rs. 525
Between Rs. 10 and Rs. 19	9	Expenses per 100 clothes washed, Rs. 1
Between Rs. 20 and Rs. 29	6	No. of clothes washed, 13,100
Between Rs. 30 and Rs. 39	3	Total expenses, Rs. 131
Between Rs. 40 and Rs. 50	3	Net income of 24 washermen, Rs. 394

TABLE 38

MONTHLY EARNINGS OF BARBERS. — I

Income Grade	Number in the Returns Collected by us	Remarks
Below Rs. 10	Nil.	
Between Rs. 10 and Rs. 20	16	Gross income of 23 barbers, Rs. 451
Between Rs. 21 and Rs. 31	4	Expenses, Rs. 27
Above Rs. 31	3	Net income of 23 barbers, Rs. 424

TABLE 39

MONTHLY EARNINGS OF BARBERS. — II

Income Grade	Number in the Returns Collected by the Barber	Remarks
Below Rs. 10 . .	4	Figures are of net income
Between Rs. 10 and Rs. 15	25	
Between Rs. 16 and Rs. 25	2	

On the basis of Tables 37 and 38, the net monthly earnings of a washerman and a barber would amount to Rs. 16·4 and Rs. 18·4 respectively. Table 39 would give the barber an average income of only Rs. 12 a month. Even allowing for a certain not unnatural element of under-estimation in the returns of income revealed to a colleague which are collated in Table 39, it seems clear that the average monthly income of these two important classes of urban skilled workers does not exceed Rs. 20 and is probably in the neighbourhood of Rs. 16.

Moreover, the results of some industrial inquiries conducted by members of the Chanakya Society in Patna point in the same direction. Thus

it was found that the monthly incomes of workers engaged in pipe-making, weaving, cloth-printing, and topee manufacturing did not exceed Rs. 20 a month.[1] Private inquiries on the incomes of hand-loom weavers have shown that the average income per head of this important class varies between 8 annas and 12 annas per day, which would give them a monthly income of between Rs. 12 and Rs. 18 on the basis of 24 working days in a month. It is true that the earnings of goldsmiths and silversmiths exceed this figure by quite an appreciable amount; but these aristocrats among artisans form a very small minority, the weavers, washermen and barbers forming the vast majority of this class. On the whole, it would be reasonable to estimate the income of the independent artisans and other skilled workers of the towns at Rs. 16 a month or Rs. 192 a year. This would give the 1,047,000 workers of this class an income of Rs. 201 millions. The margin of error in this estimate may be placed at ±10 per cent.

Income of Urban Unskilled Workers

There are 1,268,000 unskilled workers in urban areas. From a study of the wage rates of the unskilled factory labour, given in the reports of the Chief Inspector of Factories, it appears that the monthly income of a male labourer is on an average

[1] *Vide* reports of the Society for the years 1925–26, 1927–28 and 1928–29. In the most superior of all industries, viz. gold and silver thread, an expert worker could get Rs. 36 a month and an ordinary worker Rs. 21. (Report for 1925–26.) In a previous year, a visit to a neighbouring tannery is reported, which showed that it employed 33 persons on an average monthly wage of Rs. 15, the skilled labourer getting a wage of Rs. 18 to Rs. 25 a month and ordinary labourers from Rs. 8 to Rs. 18.

Rs. 12. We obtained some more data on this subject from municipalities. In order to get some idea on the matter, we had included in one of our circular letters to the heads of all municipalities a request for information on the average scale of wages of recently recruited peons. A number of municipalities had not recruited any peons in the recent past, but from the answers of the heads of those which did, it was found that the average wage varied between Rs. 10 and Rs. 16, Rs. 12 being paid in the vast majority of cases.[1] And a municipal peon may legitimately be regarded as *primus inter pares* in a world of urban unskilled labourers. We may, therefore, conclude that, calculating on the optimistic side, the average monthly income of an unskilled labourer was Rs. 12 in urban areas. But this applied only to males, whereas 40 per cent of urban unskilled workers were females. If we assume that strictly for purposes of income-earning alone, two males = three females, the total income of the 1·3 million workers dealt with in this section comes to Rs. 158 millions. This is more likely to be an over-estimate rather than an under-estimate; however, the margin of error may be placed at ± 10 per cent.

The total earnings of all urban industrial workers, excluding those paying income-tax, thus come to

[1] Details are as under:

Monthly Wage of Peon	Number of Municipalities Paying that Wage
Below Rs. 12 . .	29
Rs. 12 . .	26
Above Rs 12 . .	34

The average wage paid by all the 89 municipalities came to Rs. 12·6 or nearly Rs. 13.

Rs. 759 millions, giving an income per occupied person of Rs. 203.

Rural Skilled Workers

We have seen in Table 31 that there are 6·3 million persons working as carpenters, weavers, blacksmiths, potters, barbers, washermen, etc., in the 500,000 villages of British India. Nor only is information on the subject of their earnings gravely inadequate, but it is difficult to use even such data as is available, for the methods of payment are complex enough to puzzle the wit of any man living. Says Mr. Darling, perhaps the most eminent official entitled to speak with authority on rural India, " It is difficult to assess the earnings of a village servant when he is paid in so many different ways and for such uncertain occasions, as birth, marriage and death ".[1] The village barber still exercises his traditional sway; and often does he use his knife in a fashion that would excite the jealousy of a professional surgeon. The village servant's tasks are so diverse, and his relationship to the rest of the community is so intimate, that it almost seems an impertinence on our part to translate his efforts into neat little figures of money-income.[2] But we must needs take that risk, as otherwise our study would be incomplete.

From the figures given in the only two up-to-date

[1] *Wit and Wisdom of the Punjab*, p. 263. The same author's *Rusticus Loquitur* also contains a very interesting account of conditions in rural Punjab.

[2] For a very good description of the conditions of the artisan class in India, see Prof. Radhakamal Mukerjee, " The Communal Organisation of Industry as the Regional Type in India", in the Journal of the Dept. of Letters of the Calcutta University, vol. ii, 1920.

wage-censuses, viz. those for the United Provinces (1936) and the Punjab (1932), it appears that in the United Provinces the daily earnings of a carpenter varied from 6 annas to 12·5 annas, the average rate for the province being 8·5 annas in 1934, and those for a blacksmith varied from 6 annas to 10·7 annas, the average rate for the province being 7·8 annas. In the Punjab, the inquiry was conducted in 1932, and the wages of a carpenter varied from 10 to 16 annas, with an average of 13 annas, and those for a blacksmith from 8 to 13 annas, with an average of 10 annas. Allowing for a fall of 10 per cent in rural wages in the United Provinces since 1931, and assuming a working year of 300 days, we get an estimate of the average annual income of carpenters and blacksmiths of the United Provinces as Rs. 177 and Rs. 163 respectively. The corresponding figures in the Punjab are Rs. 244 and Rs. 188 respectively. The latter set of figures shows considerable agreement with the impressions collected by Mr. Darling in his tour of the province, who states: "For village servants generally my enquiries suggest that the better placed among them now do not earn more than Rs. 200 to Rs. 300 a year, and the others from Rs. 100 to Rs. 200".[1] The results of the village inquiries conducted in the Madras Presidency by some students of Dr. Gilbert Slater in 1922 showed an average annual income of Rs. 120 for the artisans. An able study of a Malabar village carried out in 1926 gave similar results,[2] while the

[1] *Wit and Wisdom of the Punjab*, p. 267.

[2] In a survey of Padapalle village Ramchandrapur Taluka, of the Madras Presidency, carried out by the Banking Enquiry Committee, the net annual income of a weaver was placed at Rs. 150.

village inquiries conducted at our request in the United Provinces and in the Karnatak showed the following results :

TABLE 40

ESTIMATED ANNUAL EARNINGS OF RURAL ARTISANS
(In Rs.)

Occupation	United Provinces				Karnatak
	Village Bhauma, Dist. Bulandshahr	Village Gopalpur, Dist. Bareilly	Village Dhara Buzarg, Dist. Gorakhpur	Village Shyam Darma, Dist. Gorakhpur	Village Heasarur, Dist. Dharwar
Blacksmith	76	—	120	367	78
Barber .	151	64	45	101	90
Priest .	98	59	—	181	—
Carpenter .	137	112	—	—	133
Potter .	99	—	—	—	—
Tailor .	185	—	165	125	100
Cobbler .	96	—	—	—	—
Washerman	—	24	—	—	—
Goldsmith .	—	—	265	214	—

It is true that these estimates of earnings are for the year 1935, while wages in 1931 must have been slightly higher ; on the other hand, about 10 per cent of the income figures contained in the above tables is accounted for by agriculture, which was followed as a subsidiary occupation. On a consideration of the relevant evidence for what it is worth, it appears to us that taking the country as a whole, and lumping together the goldsmith who is the aristocrat of the artisans with the potter who occupies a low place in that hierarchy, and also taking due note of the comparative numerical strength of each class, we would be justified in estimating the rural artisan's income as averaging somewhere between Rs. 100 and Rs. 180 in 1931. On this basis, the total income of the 6·3 million

village craftsmen in British India comes to an amount between Rs. 626 millions and Rs. 1127 millions. We may adopt an intermediate figure of Rs. 877 millions as the income of this class, noting that it contains an error of ±25 per cent.

Rural Unskilled Workers

From an analysis of the replies we received on the subject of wages of unskilled labour from a number of Agents of the All India Village Industries Association, we found that men usually received a daily wage of 4 annas and women one of 2·5 annas. If we assume a working year of 300 days, this would mean an annual income of Rs. 75 for the man and Rs. 60 for the woman. According to the quinquennial wage census of the United Provinces taken in August 1934, daily wages of weeders, reapers and ploughmen were, on an average, $3\frac{1}{2}$ annas, 3 annas, and $3\frac{1}{2}$ annas, respectively, while ploughmen paid by the month received Rs. $5\frac{1}{2}$.[1] These figures seem to show an average annual income of Rs. 60 for unskilled rural labour in the United Provinces. For the Punjab, the quinquennial wage census of 1932 showed a daily rate for unskilled labour ranging from 2 annas to 8 annas, the most common rate being 6 annas; while the rates for ploughmen paid by the month ranged from Rs. 4 to Rs. 12, the most common range being between Rs. 6 and Rs. 10. These figures apparently indicate an average annual income of Rs. 100 for

[1] It is not necessary to point out that we have taken ploughmen's wages only as representative of rural labour and not in order to include them in our calculations, as agricultural wages have already been included in our inventory of agricultural wealth.

unskilled labour in the Punjab. The figures for the United Provinces as well as those based on replies from the Agents of the All India Village Industries Association are for the year 1934–35 and have to be raised, as wages had fallen by about 10 per cent since 1931. On the whole, it would be fairly safe to estimate the annual income of the unskilled labourer in the rural areas at an average of between Rs. 70 and Rs. 100. Working on this basis, and equating 3 women to 2 men for the purposes of calculating earnings, we can estimate the income of the 4·2 million unskilled labourers in Indian villages at Rs. 311 millions, with an error of ± 15 per cent.

Conclusion

We sum up below the earnings of the 14·6 million workers occupied in industry, except those whose incomes exceed Rs. 1000 a year :

TABLE 41
(Figures in Thousands)

Description	Number	Estimated Earnings	Margin of Error
Urban :			
Workers in organized industry	1,430	400,000	± 10
Independent artisans and other skilled workers . .	1,047	201,000	,, 10
Unskilled workers . .	1,268	158,000	,, 10
Rural :			
Village artisans and other skilled workers . .	6,260	877,000	,, 25
Unskilled labourers . .	4,219	311,000	,, 15
Grand Total .	14,224	1,947,000	± 18

To this total of Rs. 1947 millions, we have to make additions to cover the income of 1·6 million

working dependants and 2·2 million subsidiary workers who are engaged in industry. Working dependants do not really receive an income of their own, as by definition they are "not themselves receiving the wage or controlling the means of subsistence gained". And yet their activity in assisting the principal workers whose dependants they are, must have the consequence of raising the incomes of those principal earners above the average. If we assume that this results in four working dependants adding as much to the income as one principal earner, and if we continue our assumption that three persons, engaged in doing part-time work in an occupation as subsidiary workers, earn as much as one principal worker, the addition to be made on account of working dependants and subsidiary workers engaged in industry comes to Rs. 153 millions. The total earnings of persons engaged in the census head 'Industry', with the exception of those whose incomes exceed Rs. 1000 a year, is, therefore, estimated by us at Rs. 2100 millions. We make no deduction for expense, as our estimates are of net income.

In the next chapter, we shall calculate the income of employees of Government, Central, Provincial and Local, and also that of earners engaged in the working of Railways, Posts and Telegraphs.

CHAPTER IX

SALARIES AND WAGES OF WORKERS ENGAGED IN PUBLIC ADMINISTRATION AND IN THE WORKING OF RAILWAYS, POSTS AND TELEGRAPHS

WORKERS in this apparently miscellaneous collection of groups numbered 1·6 million, the income of 142,000 of whom has already been accounted for in Chapter VII. The main reason for their being grouped together in this Chapter is that both Railways and Posts and Telegraphs are owned by the State in India. We shall first attempt an estimate of the combined total of wages and salaries of all the 1·6 million members in these groups, and then by deduction of the estimated salary bill of those paying income-tax, arrive at an estimate of the wages and salaries of those whose individual incomes do not exceed Rs. 1000 a year.

Salaries and Wages of Employees of Local Authorities

No official statistics are published of the salary bill of municipalities. The diligent student can always seek enlightenment in their establishment schedules, but there were three reasons for not following that course, first, all municipalities do not publish their establishment schedules; second, not many of even the published ones are available; third, the psychological effects of trying to work out the salary totals from establishment schedules,

actually tried in the case of two municipalities, proved unduly distressing and turned the scales against their use. We therefore fell back on our usual support — we addressed all the 760 municipalities requesting them to state (1) the number of their employees paying income-tax, and their total salary bill; and (2) the number of their employees whose salaries or wages were below Rs. 1000 a year, and their total salary and wages bill. 106 municipal officers were kind enough to reply and gave the desired information for 19,347 municipal servants, the urban centres concerned having a population of 2·8 millions. From these figures we worked out the average income per head of those not paying income-tax and we tabulate the results below:

TABLE 42

Average Monthly Income in Rs per Employee Not Subject to Income-tax	Number of Municipalities	Population of Municipalities	Number Employed	Number Employed per Municipality	Number of Urban Population per Employee
9–10	11	219,152	1,499	136	146
11–15	37	718,346	5,763	156	125
16–20	22	535,081	3,841	175	139
21–25	16	809,333	6,227	389	130
26–30	5	103,761	1,163	233	89
31–35	6	146,943	453	76	324
36–40	6	250,132	374	62	669
41–50	3	35,170	27	9	1303
Total	106	2,817,918	19,347		

It is obvious from the table that there is something wrong with the statistics of the fifteen municipalities the average monthly income of whose employees ranged between Rs. 31 and Rs. 50; the total number of their employees must be certainly

larger than is set out in the table. We believe that these replies are probably explained by the thesis that the officers concerned misunderstood the nature of our question and omitted to include the number and wages of their menial employees such as sweepers and other conservancy staff; this would also account for the higher average monthly income of their employees. We have, therefore, not taken the statistics of these fifteen municipalities into account when making our estimate of the average income per municipal employee. The income per head of the employees not paying income-tax, of the remaining ninety-one municipalities, works out at Rs. 220 a year.[1] The number of employees of these municipalities whose incomes were above Rs. 1000 a year and who therefore paid income-tax was 598, or 3 per cent of the total number. The census

[1] The following detailed figures of the frequency distribution of earnings of the 6248 employees of six municipalities, with a total population of 749,305 persons, may be interesting in this connection:

Monthly Income Grade	Number in Each Class	Percentage in Each Class to Total No.
Below Rs. 10	1192	19·1
Between Rs. 11 and Rs. 20	2596	41·5
,, 21 ,, 30	1069	17·1
,, 31 ,, 40	548	8·8
,, 41 ,, 50	345	5·5
,, 51 ,, 60	185	3·0
,, 61 ,, 83	159	2·5
Above Rs. 83	154	2·5

It will be noticed that more than 60 per cent of the total number employed by these six municipalities have a monthly income of less than Rs. 20. Even if we include in our calculations the fifteen municipalities we have excluded as having submitted incomplete returns, the average income per employee comes only to Rs. 229, as against the figure we have adopted of Rs. 220. The difference is not materially significant and is further proof of the comparatively low average rates of payment of municipal workers.

figure of persons occupied in municipal and other local service is 118,000, and on the basis of Rs. 220 a year, applied to 97 per cent of this number, we get Rs. 25 millions as the total income of municipal employees whose incomes were below Rs. 1000 a year each.

These figures, however, refer to the year 1935, whereas municipal salaries had suffered on an average a reduction of 10 per cent since the crisis of 1931. As our study pertains to the year 1931, we have to raise the total accordingly to Rs. 28 millions, giving an average annual income of Rs. 244 per municipal employee. In explanation of why the average income of a municipal employee is lower than that of a worker in organized industry, we may point out that municipal workers include a large proportion of very low paid employees such as sweepers, whose monthly income averages Rs. 8 or 9, in most places.

Salaries of Government Servants

Our favourite method of obtaining information by just asking for it, failed in the case of the Provincial Governments. With the exception of the Governments of Bombay, Burma and Central Provinces, the rest regretted their inability to tell us either the number or the total salary of their employees; and the Accountants-General whom we then approached were equally firm. We were referred for information to the Budget Civil Estimates; and were thus forced to the dreary compilation of salaries of officers, and pay of establishment, department by department, from seven provincial budgets. The results of our laborious research

are embodied in the following table and refer to the financial year 1931–32.

TABLE 43

(Figures in Millions of Rs.)

Name of Government	Expenditure Charged to Revenue	Salaries Charged Against Revenue	Percentage of Salaries to Total Expenditure
Government of Madras . .	162·4	71·7	44·2
,, Bombay . .	152·0	52·2	34·2
,, Bengal . .	110·1	51·2	44·5
,, United Provinces .	118·4	55·8	47·1
,, Punjab . .	103·8	47·0	42·5
,, Burma . .	93·3	46·2	49·5
,, Bihar and Orissa .	54·3	23·6	43·5
,, Central Provinces .	45·8	23·0	50·2
,, Assam . .	24·8	12·2	49·2
,, North-West Frontier	16·9	6·5	38·1
Total . .	881·8	389·4	44·4

Saddened by experience, we refrained from requesting the Government of India for information on their salary bill; and turned instead to the details of their Civil and Defence Estimates. We found that expenditure on salaries by the Central Government amounted to Rs. 303·2 millions, of which 226 millions were claimed by the Defence Services and Rs. 77 millions by the Civil Departments. The combined provincial and central total of salaries and wages for the year 1931–32 thus worked out to Rs. 692·6 millions.

Salaries and Wages of Railway Employees

In this case, again, efforts were made to obtain information from the Agents of the different Railway Administrations. We interviewed two of them, and ultimately carried our quest to the citadel of

the Railway Board itself in Simla in person. Our efforts were in vain. We were told at Simla that if we had some 'official status', matters might have been arranged. As it was, we were only doing research as a private student. And so once more we fell back upon the Budget Estimates and by referring to the detailed schedules in the demand for grants laid before the Legislative Assembly, we found that the total salary and wages bill of Indian Railways amounted to Rs. 240·9 millions in 1931–32.

Salaries and Wages of the Employees of Posts and Telegraphs Department

By referring to the detailed schedules in the demand for grants for this Department, we found that the total of salaries and wages paid to its employees amounted to Rs. 78·6 millions in 1931–32.

We can now sum up the totals of salaries and wages of the following classes of employees:

TABLE 44

	Millions of Rs.
Persons in the service of:	
Local Authorities *	28·0
Provincial Governments	389·4
Government of India	302·2
Railways	240·9
Posts and Telegraphs Department	78·6
Grand Total	1039·1

* In the case of local authorities the figures refer only to those employees who did not have to pay income-tax.

This figure, however, includes the salaries of persons with incomes above Rs. 1000 a year which have already been included in Chapter VII. The amount to be deducted on this account is Rs. 397

millions.[1] We have also to deduct the wages of 130,081 Government employees serving in industrial establishments whose income has already been accounted for in Chapter VII. This figure works out at Rs. 52 millions. That leaves Rs. 590 millions to be added to our figures as the income of the 1·35 million persons dealt with in this chapter.

We shall proceed in the next chapter to make a rather rough estimate of the income of workers engaged in trade and in forms of transport other than Railways or Posts and Telegraphs.

[1] Income-tax on salaries paid by Government accounted for 52·5 per cent of the total tax assessed on salaries. The total of income from salaries assessed to tax was Rs. 756 millions. If we assume that the average rate of tax paid by a Government employee was the same as that paid by other salaried persons, the total salary income of Government servants on which income-tax was assessed would come to Rs. 397 millions.

CHAPTER X

INCOME OF PERSONS ENGAGED IN TRADE AND IN FORMS OF TRANSPORT OTHER THAN RAILWAYS AND POSTS AND TELEGRAPHS

We have estimated in Chapter III that there were, in 1931, 5·3 million earners engaged in trade, 1·9 millions of whom were working in towns and the remaining 3·4 in villages; while the number of persons employed in transport was 1·6 millions, half of whom were resident in towns and the rest in the country. In Chapter VII, we have accounted for the income of 368,000 persons mainly engaged in trade whose incomes were large enough to bring them within the scope of income-tax statistics. In Chapter IX, we have estimated the income of 527,000 persons employed in Railways and Posts and Telegraphs. Broadly speaking, both the groups of persons whose income we have already calculated are urban earners. That leaves us to estimate in this chapter the income of 4·9 million traders, 1·5 millions of whom worked in towns, and of 1·1 million transport workers of whom 0·3 million worked in urban areas.

Income of Traders

No statistics are available to help us in estimating the income of this class. In the absence of their getting an income sufficient to bring them within the scope of income-tax statistics, we have to fall back upon general arguments to make a rough estimate

of their income. Generally speaking, the small traders in towns belong to the same social strata as urban skilled workers, and are a little better off;[1] while in the villages, the trader usually combines money-lending with trading, and enjoys a position markedly superior to that of both cultivator and artisan. In Chapter VIII, we estimated the annual income of the urban craftsman at Rs. 192, of the urban factory worker at Rs. 285 and of the rural artisan at Rs. 140. We may, therefore, estimate the average income of the trader dealing in towns at Rs. 300 a year.[2] and that of his colleague in the

[1] Cf. "An examination of the wages paid to shop assistants both in Bombay and Ahmedabad suggests that these do not compare unfavourably with the wages of skilled industrial workers in the Presidency, although it is not possible to make any direct comparison as the work of the two classes is so dissimilar", p. 136. Report on an Enquiry into Wages, Hours of Work and Conditions of Employment in the Retail Trade of some Towns of the Bombay Presidency — Prepared by the Labour Office, Government of Bombay.

[2] An inquiry into the wages and other conditions of employment in the Retail Trade of some towns of the Bombay Presidency was conducted by the Bombay Labour Office in 1935 and gave the following results for Bombay City:

FREQUENCY DISTRIBUTION BY INCOME GROUPS

Income Group	No. of Workers on Monthly Wages
Below Rs. 5	22
Between Rs. 5 and Rs. 10	173
,, 10 ,, 15	341
,, 15 ,, 20	692
,, 20 ,, 25	716
,, 25 ,, 30	664
,, 30 ,, 35	736
,, 35 ,, 45	791
,, 45 ,, 55	566
,, 55 ,, 65	282
Rs. 65 and over	403
Total	5386

2608 persons or nearly 50 per cent of the number investigated had incomes below Rs. 30 a month or Rs. 360 a year. If we assume that

villages at Rs. 200 a year. Calculating on this basis, we estimate the income of the 4·9 million traders dealt with in this section at Rs. 1130 millions. To this figure must be added the earnings of 1·43 million persons, of whom 1·08 millions followed trade as a subsidiary occupation and 350,000 as working dependants. On the assumption made before, that the earnings of one principal earner = that of 3 subsidiary workers = that of 4 working dependants, we estimate their income at Rs. 103 millions. The total net income of all persons engaged in trade and not subject to income-tax thus comes to Rs. 1233 millions. The error in our figure is not likely to exceed ±15 per cent.

Income of Transport Workers

No data is available on the subject of the earnings of workers engaged in transport other than Railways, Posts and Telegraphs. The detailed classification shown in Table 45, taken from the census tables, is of some help in estimating their income.

It is a significant comment on the extent of India's advance in the sphere of industrial organization that the number of persons owning, managing or employed in working motor cars, motor buses,

half of the number whose incomes are Rs. 65 a month and above have incomes below Rs. 85 a month, and further that the average income per head in each income group was the figure intermediate between the upper and lower limits, then the average income of all the 5184 persons in the income groups below Rs. 85 a month is Rs. 32·4 a month or Rs. 389 a year. Earnings of persons employed in the Retail Trade in Ahmadabad, Poona and Sholapur are, on an average, substantially less. The corresponding figures for the smaller towns must be still lower. It is, therefore, quite reasonable to assume an average income of Rs. 300 per head per year for all the urban workers engaged in trade.

lorries and trams should only be 68,000 or less than 3 per 10,000 of population; it is perhaps a sign of her old-world charm that there are still left 48,000 owners and bearers of the traditional vehicle of emperors and nobles, the *palki*.[1] For purposes of calculation of income, however, we think items 1, 2, 4, 6 and 7, comprising 642,000 persons, may be

TABLE 45

	Figures in Thousands
1. Shipowners, boat owners and their employees	233
2. Skilled workers employed in docks, harbours, etc.	28
3. Labourers employed in harbours, docks, etc.	39
4. Skilled workers employed on the construction of roads, bridges	14
5. Labourers employed on roads and bridges	220
6. Owners, managers and employees connected with mechanically driven vehicles	68
7. Owners, managers and employees connected with other vehicles	299
8. *Palki*, etc., owners and bearers	48
9. Pack elephant, camel, ass and bullock owners and drivers	81
10. Porters and messengers	120

regarded as belonging to the class of skilled labour, and items 3, 5, 8, 9 and 10, comprising 508,000 persons, as belonging to that of unskilled labour. Generally speaking, there is no great difference between the average earnings of skilled transport workers, and those of workers in organized industry; and similarly, the average earnings of unskilled workers engaged in both industry and transport roughly correspond.

[1] The *palki* is a sort of box carriage carried on the shoulders of four persons, two in front and two behind. Traditionally the *palki* is used to convey the new bride on her first visit to her husband's home; and the custom is still followed in many villages.

On the basis of these assumptions, we estimate the income of these 1·15 million workers at Rs. 256 millions. We must add to this figure a sum of Rs. 27 millions to cover the earnings of 380,000 persons, of whom 330,000 followed transport as a subsidiary occupation and 50,000 as working dependants. That gives us Rs. 283 millions as the income of all workers not paying income-tax engaged in transport other than Railways and Telegraphs. This figure is not likely to contain an error of more than 20 per cent.

The combined total of the income of workers dealt with in this chapter is Rs. 1516 millions. We estimate the error in this figure to be less than 20 per cent. In the next chapter we pass on to estimate the income of persons engaged in the Professions and Liberal Arts.

CHAPTER XI

INCOME OF EARNERS ENGAGED IN PROFESSIONS AND LIBERAL ARTS

THE census tables show 1·5 million persons as principally occupied in the Professions and Liberal Arts. In Chapter III, we have estimated 76,000 of these to be persons who have no income. The number of earners under this occupational head is, therefore, only 1·4 millions. This number is distributed among the various professions as under :

TABLE 46

Profession	Number of Workers (in 000's)
Religion	514
Law	104
Medicine	241
Instruction	375
Letters, Arts and Science . .	206

The specific nature of the occupation followed by some of the members constituting these sub-groups deserves mention. Thus, under ' Religion ', there were 63,000 servants in religious edifices, and burial and burning grounds, pilgrim conductors and circumcisers ; while under ' Letters, Arts and Sciences ' there were — and may the shades of Dante, Michelangelo and Galileo forgive the Census Commissioner, Dr. Hutton — 16,000 horoscope-casters, astrologers, fortune tellers, wizards, witches and mediums, and 14,000 conjurers, acrobats, reciters and exhibitors of curiosities and wild animals.

It would take more than the efforts even of a Royal Commission to estimate the income of this miscellaneous group with any accuracy. What can be said with some confidence is that with the exception of 37,000 persons paying income-tax, who may be distributed between Law, Medicine and Instruction in the proportion of 3 : 3 : 2 respectively, the rest have an income per head of below Rs. 1000 a year. Generally speaking, the members of this group belong to the 'middle classes' and are from the same social strata as constitutes the majority of Government servants. Let us first take the persons who were returned under the head 'Instruction'. The average income of a school teacher in the Bombay Presidency is given as Rs. 370 in the report of the Director of Public Instruction. It is probably a little less elsewhere. We may adopt an average figure of Rs. 320 for calculating the income of the members of this class. This is not an unduly low figure, as the vast majority of those returned under 'Instruction' are teachers in primary schools and enjoy an average income of only Rs. 240 a year. Moreover, the group includes clerks and servants connected with education, the average income of the latter being less than Rs. 160 a year. As for the legal profession, quite a number achieve the impossible task of living on nothing — at least so far as income from their declared profession is concerned. Taking this factor into account, and also the fact that a majority of the persons returned under this census head are not lawyers but their clerks, we may estimate their average income at Rs. 360 per head per year. We may adopt the same figure for the medical profession as well, for though income is

steadier in their case, payment per client is less. Moreover, of the 241,000 members of this class, 81,000 were not regular doctors but just persons practising the healing arts without being registered, while 87,000 were midwives, vaccinators, compounders, nurses, etc. As for those returned under 'Religion' the average income per head of this class is, popular impressions notwithstanding, much less than that of the other professions. Priests are not so much in favour these days as before, and this profession suffers an almost continuous desertion by some of its more enterprising members. Moreover, members of this class mostly flourish in the villages where payments are much less. Under the circumstances, it would not be an under-estimate to place their average *per capita* income at Rs. 200 a year. For members of the miscellaneous collection of individuals returned under 'Letters, Arts and Sciences', we estimate an income of Rs. 200 a year as a fairly representative figure. Calculating on this basis, and excluding the 37,000 persons who pay income-tax and have their income included in Chapter VI, we get the following results :

TABLE 47

Profession	Number of Workers Excluding those Paying Income-tax (in 000's)	Estimated *per capita* Annual Income (in Rs.)	Estimated Annual Income of Members of Each Group (in 000's of Rs.)
Religion . . .	514	200	102,800
Law . . .	90	360	32,400
Medicine . . .	227	360	81,720
Instruction . .	366	320	117,120
Letters, Arts and Sciences	206	200	41,200
Total .	1403	—	375,240

To this total of Rs. 375 millions must be added Rs. 41 millions to cover the earnings of 500,000 workers, of whom 320,000 followed one of these professions, as a subsidiary occupation, and 180,000,[1] as working dependants. The total income of persons engaged in Professions and Liberal Arts, with the exception of those paying income-tax, is therefore placed at Rs. 416 millions. The error in our estimate is not likely to exceed ±15 per cent.

In the next chapter, we proceed to estimate the income of domestic servants.

[1] This is on the same assumption that one earner is equal to 3 subsidiary workers and 4 working dependants.

CHAPTER XII

INCOME OF DOMESTIC SERVANTS

We have seen in Chapter III that after allowing for errors in returns, the number of earners who followed domestic service as their principal occupation was 1·9 millions. They were assisted in their work by 1·6 million working dependants while 1·5 million workers followed it as a subsidiary occupation.

It is difficult to calculate the earnings of domestic servants in any part of the world, and India is no exception. In the absence of any published data, we had to conduct an inquiry of our own. We have already pointed out in Chapter II that we circulated a printed form on the wages of domestic servants to friends and colleagues in many parts of India. Professors and heads of colleges in nearly 80 towns were approached and many of them responded; in addition, the late Mr. J. A. D. Naorji, Managing Director of the Tata Oil Mills, was kind enough to get a number of forms filled up and returned to us from some of his branch managers in different parts of India. The forms for domestic servants in Bombay were filled in by ourselves, and by some of my old students who were good enough to interview heads of a number of households for that purpose. Altogether, the completed forms came from more than 20 towns and related to the wages of nearly 280 domestic servants. Compared to the number of domestic servants actually at work, the number for

which we obtained information is really negligible. It is remarkable, however, that the forms responded satisfactorily when subjected to a simple test. We divided the total number of returns into two arbitrary sets, making one group of the first, third, fifth, etc., forms in our file, and another of the second, fourth, sixth, etc., forms. Our analysis yielded the following results : [1]

TABLE 48

Income Grades	No. of Forms in Each Grade	
	Group I	Group II
Below Rs. 108 a year . . .	46	45
Between Rs 109 and Rs 240 a year .	63	63
Above Rs. 240 a year . . .	32	30

We have, therefore, decided to make use of these returns in estimating the income of domestic servants. The average income of a domestic servant on the basis of these returns would be Rs. 161 a year. But we must point out that our sample was biased in the sense that the forms were mostly filled in by the members of the upper middle class, and cooks and chauffeurs — the upper tier in the scale of domestic service — constitute about a fifth of the total number of domestic servants for whom returns

[1] If we split up our returns into narrower grades of income we still get a fairly close similarity in distribution :

Income Grade (Income per Month)	No. of Forms in Each Grade	
	Group I	Group II
Below Rs. 5	16	7
Between Rs. 5 and Rs. 9 .	30	38
,, Rs. 10 and Rs. 14 .	43	38
,, Rs. 15 and Rs. 19 .	20	25
,, Rs. 20 and Rs. 24 .	14	14
Rs. 25 and above . . .	18	16

were available. In order to obtain a truer average, we think it necessary to reduce this figure by 10 per cent, thus obtaining Rs. 145 as our estimate of the annual income of a domestic servant. This figure, however, applies only to urban domestic servants. The income of a rural domestic servant is at least 30 per cent lower; this would give him an average income of Rs. 101 per year. Calculating on this basis, the income of the 1·9 million domestic servants works out to Rs. 221 millions.[1] To this, we must add Rs. 104 millions to cover the earnings of the 2·9 million working dependants and subsidiary workers. We have not made any addition to these figures even though they are based on data obtained in 1935, because we find on inquiry that, on an average, wages of domestic servants have not fallen since 1931. The total income of the earners engaged in domestic service thus comes to Rs. 325 millions. We may concede a generous margin of error of ±20 per cent in this estimate.

In the next chapter, we proceed to estimate the income from house property and also make such other miscellaneous additions and subtractions from the National Income as are not assignable to any specific set of earners.

[1] This figure is made up as under:

	In 000's
Estimated income of 757,000 urban domestic servants	Rs. 109,765
,, ,, 1104,000 rural ,, ,,	Rs. 111,504

CHAPTER XIII

INCOME FROM HOUSE PROPERTY AND OTHER ADDITIONS AND DEDUCTIONS FROM INDIAN INCOME

In this chapter, we assemble together the miscellaneous items in the computation of Indian Income which cannot be brought under either the *inventory* or the *income* method. Thus to the figures of income obtained in the preceding nine chapters, we have to add our estimates of the income from house property, value of the year's output of raw silk, poultry products and honey, pensions, the revenue from indirect taxes, and a part of the interest on agricultural debt that has not been included in the income of traders. There is nothing to be added on account of persons living on their private means, as their income has already been computed under one head or other in the previous chapters. From the total of these items, we have to deduct the value of the excess of exports over imports including treasure, the net increase in the country's foreign indebtedness or net decrement in her foreign balances as the case may be, the revenue from indirect taxes and a part of the interest on the internal public debt. What remains constitutes our estimate of the Income of British India for the year 1931–32.

Additions : Income from House Property

We will begin with the additions, taking up the income from house property first. According to the

census of 1931, there were 5·9 million occupied houses in towns and 48·6 million occupied houses in villages. To any one familiar with Indian rural conditions, it would appear strange that there are supposed to be 48·6 million houses in villages, but the rigours of census classification have to be allowed for. Houses in villages are really huts that are covered with thatched roof or tin sheets put up by the cultivator himself and in most cases do not deserve to be known as anything but hovels. In any case, most of them command no rental value; and it would be rather ridiculous to impute to them an annual money income. But we do not want to be charged with deliberately under-estimating Indian Income by omitting the annual value of village huts. We therefore assume a rental value of Rs. 6 per year per hut and estimate the annual income from house property in the villages at Rs. 292 millions.

Houses which command rent and have an annual money-value are to be found in towns. No statistics are published of the annual value of house property in the urban areas. An estimate can be made on the basis of municipal totals of taxes on land and houses. Municipalities levy a property tax on the annual rental value of lands and buildings within municipal limits; and it is possible to estimate their rental value, as we can obtain the figures of the amount of such taxes as also those of the rates at which they are levied. In 1931–32, 785 municipalities with a total population of 22·4 millions had an income of Rs. 50·2 millions from taxes on houses and land. Of these, the municipalities of Bombay, Calcutta and Madras claimed 27·2 millions. The Administration Reports of these municipalities contain the following

figures of the annual value of house property within their municipal limits for the year 1931–32.

	(In Millions of Rs.)
Bombay . . .	118
Calcutta . . .	100
Madras . . .	22

The estimated total of the net annual value of property in these cities thus comes to Rs. 240 millions. For the remaining municipalities, we wrote to the various provincial governments and obtained the rates of property tax in no less than 124 municipalities. From a study of these figures, we came to the conclusion that the average rate of property tax in municipalities other than those of the three presidency cities could be estimated at 8 per cent.[1] Applying this rate to the 782 municipalities with a population of 18·4 millions and a property tax of Rs. 23 millions, we obtain a figure of Rs. 288 millions as the estimated net annual value of property within their areas. To this figure must be added Rs. 114 millions on account of the estimated value of the house property of the 7·3 million urban residents who do not live within municipal limits.[2]

[1] Details are as under:

Rate of Tax	Number of Municipalities Levying the Tax at this Rate
Below 5% . . .	6
Between 5% and 6% . .	4
,, 6% ,, 7% . .	15
,, 7% ,, 8% . .	39
,, 8% ,, 9% . .	21
,, 9% ,, 10% . .	15
,, 10% ,, 11% . .	16
,, 11% ,, 12% . .	3
12% . .	5

[2] This is on the assumption that the value of house property per head of this urban population of 7·3 millions is the same as that for the remaining urban population excluding that of the Presidency cities.

The total value of urban house property, on this basis, would be Rs. 642 millions. We must deduct from this figure Rs. 160 millions as the value of house property which has already been included in Chapter IV in the income assessed to income-tax. The amount to be added on account of urban house property is, therefore, only Rs. 482 millions. The amount to be added on account of the annual value of all house property, both urban and rural, is thus Rs. 774 millions. The error in our estimate is not likely to exceed ± 10 per cent.

Raw Silk

It is very difficult to obtain reliable statistics of the quantity and value of the output of raw silk in India. The Tariff Board's Report regarding the grant of Protection to the Sericultural Industry contains the following estimates for British India for 1931–32.[1]

TABLE 49

(Figures in Thousands)

Description	Quantity (in lbs.)		Value (in Rs.)		
	Silk Reeled	Silk Waste	Silk	Silk Waste	Total Silk and Silk Waste
Mulberry silk .	1,097	546	5,491	133	5,624
Tasar silk . .	401	160	4,562	22	4,584
Other silk . .	150	—	1,100	—	1,100
Total .	1,648	706	11,153	155	11,308

[1] The Board point out: "No reliable statistics of production are available except in Kashmir, where the industry is a State monopoly . . . units of weight and measurement not only vary from province to province, from place to place in the same area, but from one branch of the industry to another. With these limitations on our means of knowledge, we estimate the extent of the industry as follows".—Report, pp. 27-28.

As there are one or two small gaps in the information, we may adopt an estimate of Rs. 12 millions for the purpose of our calculations.

Poultry Products

No statistics of any kind are available on this subject. A bold but not unreasonable guess would be to estimate the value of poultry products at one-third of that of meat. This would give Rs. 60 millions as the value of this item. The error in this figure may be ± 30 per cent.

Honey

No information is available regarding either the quantity or value of the honey produced in British India. From the evidence of the Imperial Entomologist before the Royal Commission on Agriculture, it appears to be an important item.[1] We may tentatively estimate the value of honey produced in 1931–32 at Rs. 10 millions. The error may be ± 30 per cent.

Profits of Government from Commercial Undertakings

In our calculation of the income from Railways and Posts and Telegraphs, we have taken into account only the earnings of their employees. Both these undertakings, however, involve a vast investment of capital the profits on which should properly be counted in the national dividend. The gross profits on Railways amounted to Rs. 239 millions in

[1] *Vide* Part ii, vol. i, p. 243. The Imperial Entomologist pointed out that the quantity of honey produced in India ran into "several scores, if not hundreds of millions of lbs.".

1931–32 and that on Posts and Telegraphs to −2 millions. The capital of these undertakings is borrowed by the State and forms a part of the public debt of India. Interest on this amount came to Rs. 326 millions; this is already included in the figure of income assessed to tax in Chapter VI and to include it again now would mean double counting. We must deduct this interest from the gross profits and add only the difference to our figure of Indian Income. This amounted to a minus figure of Rs. 89 millions for the year 1931–32.

Pensions

The total amount of pensions paid by the Government of India and the Provincial Governments was Rs. 79 millions in 1931–32. In accordance with our conclusion in Chapter II, this item has to be included in our estimate of Indian Income.

Interest on Agricultural Debt

In Chapter IV we calculated the interest on agricultural debt at Rs. 540 millions and deducted the same from the gross value of agricultural output. Presumably this item should have reappeared in the incomes of the income-tax-paying classes or in that of traders with incomes below Rs. 1000 a year. The total income of both these classes is Rs. 3478 millions. But incomes assessed to income-tax include salaries and income from house property and industry; the income of the trading classes proper is, therefore, probably not in excess of Rs. 2100 millions. As has been pointed out to us, "There scarcely seems room for it".[1] Rs. 540 millions is a

[1] In a letter to the writer by Professor D. H. Robertson.

little difficult to be squeezed into a figure of Rs. 2100 millions, when it is supposed to represent the income of less than 4 per cent of the total number occupied in trade, even though money-lending is a highly profitable profession. The conclusion appears inevitable that either (1) money-lenders evade income-tax a great deal or (2) that a substantial portion of the interest on agricultural debt is received by money-lenders who are also practising agriculturists and who have not shown money-lending as their subsidiary occupation in the census returns or (3) that our figure of the interest actually paid on agricultural debt is an over-estimate. There is no doubt that each of the factors mentioned above contributes to a part of the explanation. It follows, therefore, that either a part of the income from money-lending has not hitherto found inclusion in our figures of Indian Income or that too much has been deducted in Chapter IV on account of interest on agricultural debt. It is, therefore, necessary to make an addition to Indian Income to offset the under-estimation caused by the factors mentioned above. This amount may be placed at Rs. 170 millions.

Revenue from Indirect Taxes

We have already pointed out in Chapter I that since the flow of commodities and services are reckoned at current prices, they will be inclusive of the revenue from indirect taxes. This is not, however, the case with our calculations, as we have valued agricultural output at harvest prices ; while in the case of non-agricultural output, we have not used the inventory method but obtained a sum of the net incomes of the persons engaged in its production.

We may, therefore, include the revenue from indirect taxes to make our figure of gross income comparable with those of other countries. The amount to be added on this account comes to Rs. 839 millions.

The sum total of the additions made in this chapter thus comes to Rs. 1855 millions and consists of the following items :

TABLE 50

	(In Millions of Rs.)
Annual value of House Property . . .	774
Value of Silk	12
Value of Poultry Products	60
Value of Honey	10
Pensions	79
Net Profits of Government's Commercial Undertakings	-89
Part of interest on Agricultural Debt . .	170
Revenue from Indirect Taxes . . .	839

Deductions : Revenue from Indirect Taxes

It has already been pointed out that the revenue from indirect taxes will have to be deducted from the gross figure of National Income in order to arrive at the net figure. The amount to be deducted on this account is Rs. 839 millions.

Interest on Internal Public Debt

The entire amount of the interest on India's public debt came to Rs. 457 millions in 1931-32. The amount to be deducted is the interest only on such Government loans as have been raised for other than productive enterprises. The following table gives the distribution of the total interest charges from this point of view.

TABLE 51

	(Figures in Millions of Rs)
Railways	317·7
Irrigation	58·5
Posts and Telegraphs	7·9
Forests	1·3
Salt	·4
Vizagapatam Harbour	1·5
Hydro-electrical schemes	2·1
Other Government commercial departments and undertakings	1·4
Unproductive debt	66·1
Total	456·7

The amount to be deducted on account of interest on unproductive debt is thus Rs. 66 millions. As, however, the entire interest on our public debt has not been included in our calculations so far, the real question to be decided is the amount to be added to our figure of Indian Income under this head rather than the amount to be deducted. The interest charges incurred on account of Irrigation, Forests and Salt have already been included in the value of agricultural and allied output and should not be included again. Moreover, Rs. 170 millions has also been included in the income assessed to income-tax in Chapter VI. That leaves Rs. 160 millions as the net amount to be *added* under this head.

Excess of Exports over Imports, Including Transactions in Treasure and Capital Movements

According to the statistics furnished by the Government of India to the League of Nations, our favourable balance of trade in merchandise amounted to Rs. 223 millions in 1931–32, while the

net export of gold was valued at Rs. 580 millions. But as against this, it is estimated by Government that there was a net outward movement of capital from India to the tune of Rs. 275 millions. The deduction on income account is, therefore, Rs. 528 millions. All this amount should not be deducted from the figure of British Indian Income we have arrived at so far, as a part of it is ascribable to the Indian States. If the share of the Indian States can be estimated at 25 per cent, the amount to be deducted on this account would be Rs. 396 millions.

The various deductions to be made on account of the items mentioned above comes to Rs. 1075 millions. The net addition to be made to our figures of Indian Income on account of the items discussed in this chapter thus comes to Rs. 780 millions.

In the next and final chapter, we shall bring together all the figures calculated in this and previous chapters and arrive at our estimate of the income of British India for the year 1931–32.

CHAPTER XIV

THE INCOME OF BRITISH INDIA

Our journey's end is in sight. We can now estimate the net income of British India for 1931–32 as lying between Rs. 15,878 millions and Rs. 17,904 millions. We can put the same thing in another way by saying that the income of British India for 1931–32 amounted to Rs. 16,891 millions with a margin of error of ±6 per cent. The *per capita* income amounted to Rs. 62 with a margin of error of ±6 per cent. Details are given in Table 52.

It will be noticed that in these calculations no allowance is made for under-estimation either in the case of the value of agricultural output or in that of incomes assessed to income-tax. We have seen in Chapter IV that in the case of cotton and jute, the only crops for which it is possible to check up the official statistics of output by independently arrived at figures, the officially estimated output was always below the real output and the percentage of variation was between 5 and 34. If we can, therefore, infer that the official statistics of agricultural output as a whole were below the actual output by 10 per cent, and if further we assume that evasion of income-tax and the consequent under-estimation of incomes assessed to income-tax was not less than 5 per cent we get an alternative estimate of the income of British India. This figure would lie between Rs. 16,651 millions and Rs. 18,677 millions;

in other words, it would give a total net income of Rs. 17,664 millions with a margin of error of ±6 per cent, or a *per capita* income of Rs. 65 with a margin of error of ±6 per cent. It is necessary to add that

TABLE 52

(All Figures are of Net Income.)

Description	Value in Millions of Rupees	Margin of Error Percentage
Value of Agricultural Output . .	5,927	—
Value of Livestock Products . .	2,683	±10
Value of Fishing and Hunting . .	120	±20
Value of Forests Products . . .	92	—
Value of Mineral Produce . . .	180	—
Incomes assessed to income-tax . .	2,161	—
Incomes not assessed to income-tax of workers engaged in industry . .	2,100	±17
Incomes not assessed to income-tax of workers engaged in service of the State, Railway, Posts and Telegraphs . .	590	—
Incomes not assessed to income-tax of workers engaged in trade . .	1,233	±15
Incomes not assessed to income-tax of workers engaged in Professions and Liberal Arts	416	±15
Incomes not assessed to income-tax of workers engaged in transport other than Railways, Posts and Telegraphs .	283	±20
Incomes not assessed to income-tax of workers engaged in domestic services .	325	±20
Miscellaneous items	780	±10
Grand Total . .	16,890	±6

only our first figure of Rs. 16,890 millions or a *per capita* income of Rs. 62 is comparable with the estimates made by previous writers on the subject, as none of them have made any allowance for under-estimation in the case of either agricultural output or of incomes assessed to income-tax.

We can now further estimate the distribution of these two alternative figures of Indian Income among the following sources :

TABLE 53

Source	Estimated Number of Earners in Millions including Earner-equivalents of Working Dependants and of Subsidiary Workers	Estimated Income in Millions of Rupees		Percentage of Total Income		Income per Occupied Person	
		Allowing for Under-estimation in Agricultural Income and Income Assessed to Income-tax	Not Allowing for the Under-estimation included in Column 3	On the Basis of the figures Contained in Column 3	On the Basis of the Figures Contained in Column 4	On the Basis of the Figures Contained in Columns 2 and 3	On the Basis of the Figures Contained in Columns 2 and 4
Agriculture, Pasture, Hunting and Fishing . .	70·3	9331	8731	52·8	51·7	133	124
Industry . .	15·4	3002	2959	16·9	17·5	195	192
Services, including trade, transport, Government, professions and domestic services . .	13·0	3988	3959	22 6	23·4	307	305

It is clear that services in this country are paid for at higher rates per worker than the labour of those who are engaged in the production of material commodities. Some may see in this a significant indication of what may be termed ' exploitation ' in our economic system. Whether that be so or not, there is no doubt that Government servants, traders, lawyers, doctors and members of the other professional classes are paid at rates vastly at variance with what is paid to agricultural and industrial workers. It is true that with the development of the economic system, services begin to play a more important part ; but that would be more in the direction of their contributing a larger quantum to the nation's supply of utilities. In the case of an under-developed economy like that of India, however, material wealth should form a more important

component of its National Income than is shown by our figures; and that it does not is due to the high rates of payment for the services. There seems to be, therefore, a reasonable case for a reduction in the rates of payment of the service element in Indian economy.

It will also be noticed that the income per industrial worker is not more than 50 per cent higher than that per agricultural worker. This is due mainly to the fact that the bulk of our industrial workers work with their hands and have but little capital to assist them. It is also an indication of the inadequate extent to which our system of production has become *capitalistic*, using that phrase in its purely technical sense.

Re-classifying our statistics of income in an even rougher way, and assuming that all income-tax payers reside in towns, we get the following figures of income per occupied person for residents in urban and rural areas:

TABLE 54

Description	Total Income (In Millions of Rs.)		Income per Earner		Income *per capita*	
	Allowing for Under-estimation in Agricultural Income and Income Assessed to Income-tax	Not Allowing for the Under-estimation included in Column 2	On the Basis of Total Income as per Col. 2	On the Basis of Total Income as per Col. 3	On the Basis of Total Income as per Col. 2	On the Basis of Total Income as per Col. 3
Rural .	12,250	11,658	142	135	51	48
Urban .	4,928	4,820	436	426	166	162

Urban income per head is more than thrice as high as rural income; and our figures amply support the popular view of towns being better off than villages. It must not be forgotten, however,

that the cost of living is lower in the rural areas, particularly in the matter of house room and of foodstuffs; on the other hand, the cost of imported articles and of manufactured commodities is generally higher in the villages. Moreover, unlike in England, conditions of housing in Indian rural areas are truly appalling [1] and there is no doubt that underlying the difference in the *per capita* money income of urban and rural areas is a real difference in economic welfare. Here is perhaps the most potent reason behind the campaign of Mahatma Gandhi for patronage of khaddar and the products of other village industries, as this constitutes one way of inducing a flow of income from the urban to the rural areas.

It may be thought that in such a poor country as we have shown India to be, there would not be a problem of distribution. In fact, however, the condition of the majority is very much worse than is indicated by the figure of *per capita* income. If we take the urban classes, nearly one half of their total income belongs to less than one tenth of their total number.[2] Even among the comparatively well-to-do class, whose annual incomes exceed Rs. 2000 a year, 38 per cent of their number could claim only 17 per cent of their total income, while a little more

[1] Cf. Census report, p. 59. Dr. Hutton quotes from the report of the Census Commissioner for the United Provinces: "If village densities were calculated on the area of inhabited site or sites and not on that of the site plus the village lands they would generally be greater than that of any town".

[2] We have assumed that all income-tax payers live in towns. Their number has been estimated by us at 914,000 in Chapter VII; and the total income assessed to income-tax was Rs. 2161 millions. That leaves an income of less than Rs. 2659 millions for the remaining 9·1 million urban earners.

than 1 per cent were in possession of as much as 10 per cent of their total income. Inequality of income is present in at least equally great measure also among the agricultural classes. Though no income-tax is levied on agricultural income, some indication of the distribution of income is available from the statistics of the distribution of agricultural holdings. These figures are available only for the province of Bombay. Out of 22 lakhs of registered holders of land in that province, no less than 10 lakhs had holdings of below 5 acres in size and the total area held by them amounted to only 25 lakhs of acres. In other words, 48 per cent of the landholders of this province had between them only 9 per cent of the total cultivated land in the province; as against this, less than 1 per cent of the landholders had between them 16 per cent of the total land. In addition, there are in the province 23 lakhs of agricultural labourers, most of whose incomes are smaller than that of the smallest landholder. In the other provinces, more than 60 per cent of the cultivators appear to own holdings of less than 5 acres each.[1] Moreover, the economic condition of the so-called untouchable castes who reside in villages is wretched beyond description. Further confirmation of the utter poverty of the masses is available if we examine the inadequacy of the nation's food supply from the point of view of its nutritional requirements. Not only is there a grave deficiency of the vital elements of proteins, fats and the different

[1] For 73 villages in the Central Provinces which were surveyed by the Provincial Banking Enquiry Committee, the figure was 68 per cent; for the 6 villages surveyed by the Punjab Board of Economic Inquiry, 70 per cent; for 2 villages in the United Provinces, 70 per cent, and for 3 villages in the Madras Presidency more than 70 per cent.

vitamins, but even the calorific content of the food supply falls below minimum requirements.[1] The dry figures so laboriously compiled in these pages now assume life in a sombre background of under-nourishment, low vitality, high infant mortality and a Government whose services mainly take the form of protecting life and property. We were sorely tempted at this stage to reflect aloud upon why Indian Income is so low and what it can be if . . . But such speculative reflections have perhaps no place in a fact-finding investigation like this study; and our pent-up thoughts had better await another opportunity.

In conclusion, the general warning may be repeated that our study cannot be compared with similar attempts for Great Britain or for other advanced countries which have census of production and other ample statistical data, and our figures necessarily carry less authority than those calculated for these countries.

[1] These remarks are based upon a special study made by the author, the results of which are contained in a paper he read before the Indian Statistical Conference at Calcutta in 1938. Dietetic surveys made by Dr. Aykroyd and Mr. B. G. Krishnan in some South Indian villages show that between one-third and a half of the families surveyed were underfed.—*Indian Journal of Medical Research*, vol. 24.

APPENDICES

APPENDIX A

EXTRACTS FROM SOME LETTERS AND COPIES OF PRINTED FORMS USED IN THE INVESTIGATION

1. Extracts from the two letters sent to Chief Officers of municipalities, requesting information on slaughter, milk consumption, wages, etc.
2. Copy of questionnaire on rural economics sent to correspondents and also used in the village surveys.
3. Copies of printed forms used in the village surveys.
4. Copies of printed forms on output and wages sent to owners of industrial establishments.
5. Copies of covering letter and printed form on the earnings of domestic servants sent to correspondents.

1.—*Extract from Letter 1 to Heads of Municipalities*

One of the most important items that has hitherto evaded proper calculation has been the income arising from meat, etc. I believe cattle-slaughter is carried on only in licensed slaughter houses in your Municipality. I shall be grateful if you will furnish me with statistics of the cattle slaughter every year for the period 1920 to 1934 or any smaller period as may be convenient to you.

I should be grateful, if you would kindly give me statistics under the different heads of live-stock, viz. bullocks, bulls, cows, buffaloes, etc., or if that is not convenient to you, at least under the two heads cattle, and sheep and goats.

I should also be thankful if you could give me some information on the prices of the different classes of slaughtered live-stock. My research would further be assisted considerably, if you could give me any estimate you may have made of milk consumption in your city.

Please excuse me for the trouble just given to you. I

can only plead in defence that the results of my work, if properly carried out, would prove of national service.

Praying for an early reply.

I beg to remain,
Dear Sir,
Your most obedient servant,

Extract from Letter 2 to Heads of Municipalities

I shall be grateful if you can kindly supply me with the following figures for the calendar year 1934 or alternatively for the financial year 1934–35.

1. (*a*) Number of cattle slaughtered in the licensed slaughter houses of your municipality.
   (*b*) Number of sheep and goats slaughtered in the licensed slaughter houses of your municipality.
2. Number of building permits issued during the year.
3. (*a*) Number of municipal employees drawing a monthly salary of less than Rs. 83 (*i.e.* whose incomes are below the income-tax limit) and their total wages and salary bill per month.
   (*b*) Number of municipal employees drawing a monthly salary of more than Rs. 83 and their total salary bill per month.
4. Average monthly wages of a newly recruited municipal peon.

I earnestly request you to furnish me with the above information as it is very important for a proper computation of our national income. In January of this year, I had addressed you a letter on the subject of slaughter statistics; and in March on building permits. Perhaps the information required was too elaborate and hence you could not comply with the requests contained in those letters. I am now addressing you again a much simpler request and I hope you will kindly co-operate with me in my work and enable me to do a piece of research of value to the country.

Thanking you and requesting the favour of an early reply,

Yours faithfully,

2.—*Points on which Information is Required from Village Inquiries*

(1) (*a*) Name of village, Taluka and district. (*b*) Population of the village.

(2) The extent to which agricultural produce is consumed by the cultivator; description of the proportion of crop consumed by the producer by such crops as rice, wheat, jowar, etc.[1]

(3) Percentage of agricultural produce of the village given to the village artisans as payment in kind for their services; number and description of those artisans and their estimated monthly earnings.

(4) Estimated daily consumption of milk per head in the village.

(5) Estimated production of milk and of ghi in the village.

(6) Percentage of population which consumes meat and the quantity and value of such consumption per head.

(7) Percentage of population which consumes eggs, and quantity and value of such consumption per head.

(8) Percentage of population which consumes fish, and quantity and value of such consumption per head.

(9) Estimated monthly earnings of village barbers, washermen and priests.

(10) Prices of agricultural commodities in the village.[1]

(11) Seed rate per acre for different crops or the proportion of quantity of seed to crop harvested.

(12) Quantity and value of grain and oil seeds supplied daily to buffaloes and cows per head and period in a year for which such food is furnished.[1]

(13) Relation between a given quantity of butter and milk, or the quantity of milk required for a given output of butter.[1]

[1] Detailed information is not required on this point for each cultivator.

Form 1 (pertains to Question 2).

No.	Name of Cultivator	Number of Acres Cultivated	Total Crops (Quantity)				Quantity Consumed				Quantity Sold	Cash Receipts
			Wheat	Jowar			Wheat	Jowar				

When a cultivator refuses information, please enter his name and add 'no information'. When a cultivator cultivates more than one crop, please give details of area and output under each crop. When giving the number of acres per cultivator, please add the number of acres he has leased or rented in addition to the area that he owns.

Form 2 (pertains to Questions 3 and 9):

ARTISANS

Name of Artisan 1	Profession 2	No. of Members in Family 3	Number of Acres Owned 4	Total Crop from his Area 5	Quantity and Value of Share of Harvest that he Receives		Additional Receipts in the Shape of Cash 7	Estimated Annual Earnings 8
					Quantity	Value		

Under column 2 please give description, *e.g.* blacksmith, barber, priest, carpenter, etc.

Form 3 (pertains to Question 5).

Name of Cultivator	Number of Livestock		Daily Yield of Milk		Period of Yield in a Year		Daily Output of Milk	Daily Output of Butter
	Buffaloes	Cows	Buffaloes	Cows	Buffaloes	Cows		

Whenever there are sheep or goats which yield milk, please add two more columns for number of such animals and daily yield of milk. Whenever a cultivator's cows or buffaloes yield no milk, please state 'nil' against the names of their owners in the appropriate columns.

Form 4 (pertains to Questions 6, 7 and 8).

Name of Cultivator	Caste	Number of Members in the Family	Daily Consumption of Milk	Weekly Consumption of Meat		Weekly Consumption of Fish		Daily Consumption of Eggs (No.)	Number of Poultry
				Quantity	Value	Quantity	Value		

If a family consumes no eggs, for example, or no meat or no fish, please *enter* it under the appropriate column as *nil.* Please take particular care in the enumeration of poultry, giving the number of chickens in the village and their estimated daily yield of eggs.

Form 5 (pertains to Question 10).

PRICES OF DIFFERENT CROPS

Commodity	Number of Seers per Rupee	Remarks

Please ascertain the prices either from the cultivator himself or from the village merchant. Please state in each case whence the information is obtained regarding a commodity, under the column 'Remarks'.

4.—*Copies of printed forms on output and wages sent to owners of industrial establishments*

All Information will be treated as confidential

STATISTICS OF INDUSTRIAL OUTPUT

N.B. — Information to be given for the year 1934 or the nearest year for which information is available

When stating the quantity and value of output please give details for different items manufactured. In case no actual manufacture is carried on, but only some industrial process, *e.g. ginning*, then please state the quantity of cotton ginned and the gross income from such ginning; in case the business in question is concerned with repairs, please state number of units (if possible) repaired and *in any case* the gross income derived from such repairs.

No.	Particulars		
1.	Name of Firm or Company		
2.	Place of Business . .		
3.	Nature of Business including description of articles manufactured or repaired or otherwise altered .		
4.	Quantity and value of Output *by different items*		
5.	Quantity and Value of Raw Materials and Stores used in the business *by different items* . .		
6.	Allowance for Depreciation		
7.	Allowance for Repairs .		
8.	Number of Persons Employed . . .		
9.	Total Wages Bill . .		
*10.	Any other information considered relevant to the inquiry . . .		

* In case the information required by me cannot be conveniently contained in this form, please arrange the information on a different sheet of paper in a way convenient to yourself and send it to me.

EARNINGS OF INDUSTRIAL WORKERS

Name of the firm or Company

Place of Business

Province

Nature of Business

Is your concern a seasonal or a perennial factory? If seasonal, kindly state the number of months you work in the year

Please Note

(1) The particulars asked for below are only for factory workers (*exclude supervising and clerical staff*).
(2) Figures required for column 2 should be worked out on the basis of the *muster roll* for the month *April* 1935.
(3) If you are paying your workmen on the basis of daily, weekly or fortnightly rates, please calculate the earnings for 26 *working days.*

(Column 1) Income Group (per Month)	(Column 2) Number of Workers falling in Each Group Mentioned in Column 1	(Column 3) Remarks
Below Rs. 10 Over Rs 10 and below Rs. 20 ,, ,, 20 and ,, ,, 30 ,, ,, 30 and ,, ,, 40 ,, ,, 40 and ,, ,, 50 ,, ,, 50		
Total number of workers		

DAILY WAGES OF COOLIES IN YOUR FACTORY OR IN YOUR LOCALITY:

Man

Woman

Child

5.—*Copies of covering letter and printed form on the earnings of domestic servants sent to correspondents*

One of the important sources of National Income is furnished by the wages of domestic servants. As no official statistics are available on the subject, I am conducting an *ad hoc* inquiry of my own and send printed schedules to several friends in different parts of the country with the request that they will fill or get filled the same and return them to me.

Obviously it is not possible for me to cover all parts of the country; and am therefore approaching you for your assistance. I send by separate post ____ forms; if you can kindly get them filled either by yourself or by members of your staff or others whom you know will take an interest in my work, and return them to me by the first week of October, I shall be extremely grateful. I am conscious of the fact that I am trespassing on your undoubtedly valuable time, but a private investigator like myself is under great handicaps and unless I get some assistance of the type I am seeking, it will be impossible for me to do justice to my subject. I need not add that a good study of the Indian National Income would be of immense value to the country.

Thanking you,

Yours faithfully,

1. Name of the town where he/she is employed	
2. Designation of Servant . . .	
3. Sex	
4. Age	
5. Native Place	
6. Religion	
7. Part-time or whole-time . . .	
8. If part-time, in how many other places is he/she working?	
9. Monthly wages	
10. With Board and Lodging or not . .	
11. Description and value of any additions in kind or extras he/she may be receiving . .	
12. If part-time, total amount of wages he/she receives in other places . . .	
13. How long has he/she been employed with you?	
14. Is he/she married? If so, how many children have they got? Total number of members in his/her family	
15. How many of the children and the husband or wife as the case may be are also earners? What are their approximate total earnings? How many are dependants? . .	
16. Are there any other earners or dependants in his/her family?	
17. How many members of his/her family are staying with him/her in the town and how many are staying in the villages receiving support from him/her? . . .	

Family means husband, wife, children and all other relatives who are being *supported* by the domestic servant.

APPENDIX B

QUANTITY AND VALUE OF AGRICULTURAL OUTPUT FOR THE YEAR 1931–32 AND ANNUAL AVERAGE OF THE TEN YEARS 1923–24 TO 1932–33

RICE

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Assam	4,700	1,589	127,044	1508·9	120,646
Bengal	22,129	9,493	855,871	8323·2	750,384
Bihar and Orissa	14,091	5,738	497,805	5212·9	452,258
Bombay	3,159	1,427	194,255	1344·5	183,040
Burma	12,517	4,202	300,216	4811·3	347,225
C.P.	5,527	1,772	156,744	1548·1	136,932
Madras	11,538	5,385	613,695	5120·5	583,658
U.P.	6,555	1,989	217,032	1855·9	202,064
Coorg	83	54	5,064	45·4	4,203
Total	80,299	31,649	2,967,726	29770·7	2,780,410

WHEAT

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Bengal	145	34	3,238	30·4	2,860
Bihar and Orissa	1,221	469	44,678	470·4	44,772
Bombay	2,314	444	43,808	394·6	38,972
C.P. and Bihar	3,513	673	45,793	791·4	48,923
N.W.F.	1,014	250	14,884	229·2	13,635
Punjab	9,080	2,760	154,910	2988·8	167,791
U.P.	7,748	2,610	182,035	2599·7	181,335
Ajmir-Merwara	31	9	1,217	7·3	1,475
Delhi	41	9		15·2	
Total	25,107	7,258	490,563	7455·0	499,762

JOWAR

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Bombay	7,894	1,665	99,131	1674·0	99,667
C.P.	4,290	783	42,622	965·5	52,584
Madras	4,831	1,314	87,175	1324·4	87,838
N.W.F.	84	12	552	10·7	505
Punjab	1,014	96	4,082	104·8	4,466
U.P.	2,619	526	26,846	502·8	25,669
Ajmer	72	3		2·8	
Bengal	6	2		1·3	
Bihar and Orissa	83	26	7,642	21·0	5,731
Burma	652	92		66·4	
Delhi	30	6		5·6	
Total	21,575	4,525	268,050	4679·3	276,460

GRAM

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Bengal	180	56	4,572	39·3	3,186
Bihar and Orissa	1,465	503	37,648	508·3	38,024
Bombay	1,019	188	15,991	132·8	11,313
Burma	200	40	1,906	32·0	1,524
C.P.	1,327	250	14,456	234·2	13,534
N.W.F.	224	27	1,424	27·9	1,477
Punjab	5,547	1,080	55,114	945·5	48,255
U.P.	5,686	1,560	87,572	1630·9	91,559
Ajmer	16	1		2·6	
Delhi	99	7	1,771	8·7	1,824
Madras	105	22		18·8	
Total	15,868	3,734	220,454	3581·0	210,696

BAJRA

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs)
Bombay	5,229	569	37,750	634·6	42,127
Madras	2,877	780	54,402	783·2	54,610
N.W.F.	155	18	1,011	18·5	1,066
Punjab	3,233	460	19,563	348·0	14,800
U.P.	2,150	343	18,672	370·7	20,186
Ajmer	22	5		2·0	
Bengal	2	1		1·0	
Bihar and Orissa	71	25	3,926	25·4	3,972
C.P.	119	22		29·4	
Delhi	70	12		7·8	
Total	13,928	2,235	135,324	2220·6	136,761

BARLEY

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Bengal	87	27	1,898	24·3	1,714
Bihar and Orissa	1,356	514	31,478	512·9	31,417
N.W.F.	152	53	2,165	59·1	2,409
Punjab	629	161	6,299	233·4	9,117
U.P.	4,050	1,607	79,277	1610·3	79,424
Ajmer	42	12		15·2	
Bombay	35	10	1,333	11·0	1,780
C.P.	16	2		3·3	
Delhi	13	2		5·9	
Total	6,381	2,388	122,450	2475·4	125,861

MAIZE

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Bihar and Orissa	1,694	523	32,029	481·6	29,518
Burma . .	221	34	694	36·1	735
N.W.F. . .	449	211	11,462	210·1	11,408
Punjab . .	1,004	380	15,515	367·1	14,984
U.P. . .	2,116	833	35,425	741·0	31,513
Ajmer . .	67	14		14·3	
Bengal . .	84	29		27·8	
Bombay . .	191	78	13,592	73·0	13,543
C.P. . .	154	110		107·6	
Delhi . .	2	1		0·9	
Madras . .	110	50		57·9	
Total .	6,092	2,263	108,717	2117·4	10,171

SUGARCANE

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Assam . .	31	32	4,246	35·5	4,719
Bengal . .	233	273	36,686	253·4	34,000
Bihar and Orissa	282	307	29,768	304·5	29,704
Bombay . .	69	187	31,488	186·2	31,327
Madras . .	116	324	58,061	304·0	54,477
N.W.F. . .	44	55	6,554	58·2	6,904
Punjab . .	475	368	38,186	338·8	35,178
U.P. . .	1,577	2,207		1617·6	
C.P. . .	22	35	297,539	33·1	219,654
Delhi . .	3	2		4·6	
Total .	2,852	3,790	502,528	3135·9	415,963

GROUND NUTS

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Burma . .	408	125	12,800	156·2	13,800
Madras . .	2,635	1,234	105,000	1391·4	118,402
Bombay . .	989	498	46,100	380·3	35,806
C.P. . .	164	33		38·5	
Total .	4,196	1,890	163,900	1966·4	168,008

SEASAMUM

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Burma . .	1,308	30	4,544	48·9	7,571
C.P. . .	505	38	6,140	45·4	6,814
Bengal . .	161	26		26·3	
Bihar and Orissa	200	30		29·4	
Bombay . .	234	28		25·9	
Madras . .	747	97	49,239	99·6	44,652
Punjab . .	162	14		10·3	
U.P. . .	1,212	123		107·2	
Ajmer-Merwara .	20	1		1·0	
Total .	4,549	387	59,923	394·0	59,038

RAPE AND MUSTARD

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Assam	302	46	5,791	62·7	7,932
Bengal	770	139	17,496	126·1	15,859
Bihar and Orissa	645	136	16,200	160·6	19,171
N.W.F.	107	10	816	10·0	816
Punjab	1,150	184	16,902	161·5	14,799
Bombay	142	14	55,206	22·7	55,541
C.P.	70	16		15·5	
U.P.	2,932	467		455·5	
Total	6,118	1,012	112,411	1014·6	114,118

LINSEED

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Tons)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Tons)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Bengal	126	20	2,448	18·9	2,327
Bihar and Orissa	662	92	8,921	104·8	10,182
C.P. and Bihar	937	87	8,140	75·0	7,016
Bombay	137	14	16,960	11·7	17,512
Punjab	32	3		2·8	
U.P.	910	158		159·1	
Total	2,804	374	36,469	372·3	37,037

COTTON

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Bales of 400 lbs.)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Bales of 400 lbs)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs)
Bengal	58	15	729	19·0	924
Bihar and Orissa	68	14	1,489	14·1	1,191
Bombay	4,321	728	88,472	880·7	85,653
C.P	4,620	442	43,375	1011·6	99,311
Madras	2,204	421	42,626	467·7	47,385
Burma	228	34		64·5	
N.W.F.	18	4		4·5	
U.P.	739	205		244·4	
Punjab	2,160	538	88,396	617·1	94,080
Assam	37	15		14·9	
Ajmer-Merwara	27	11		13·9	
Delhi	4	2		1·1	
Total	14,484	2,429	265,087	3353·5	328,544

JUTE

(Figures in Thousands)

Province	Area in 1931–32 (Acres)	Forecasted Yield in 1931–32 (Bales of 400 lbs.)	Value of Forecasted Yield in 1931–32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923–1924 to 1932–1933 (Bales of 400 lbs)	Value of the Decennial Average of Yield for the Period 1923–24 to 1932–33 at 1931–32 Price (Rs.)
Assam	99	197	3,600	409·2	8,424
Bengal	1,597	4,983	102,900	7986·1	164,959
Bihar and Orissa	149	342	7,500	587·0	11,624
Total	1,845	5,522	114,000	8982·3	185,007

TOBACCO

(Figures in Thousands)

Province	Area in 1931-32 (Acres)	Forecasted Yield in 1931-32 (Tons)	Value of Forecasted Yield in 1931-32 (Rs.)	Annual Average of Forecasted Yield for the Period 1927-28 to 1932-33 (Tons)	Value of Annual Average of Yield for the Period 1927-28 to 1932-33 (Rs.)
Bengal	293	122	26,568	125	27,216
Bihar and Orissa	141	63	20,794	64	21,122
Bombay	158	144	78,380	123	66,960
Punjab	85	30	6,265	26	5,558
Madras	269	142		137	
Burma	87	39		47	
U.P.	67	47	86,905	52	87,504
C.P.	16	4		4	
Assam	14	6		4	
Delhi	1	1		1	
Add, N.W.F.	13	6	2,189	6	2,083
Grand Total	1,144	603	221,101	589	210,443

N.B. — As details for all the provinces are not available before 1927-28 we have taken in columns 5 and 6 the annual average of the six years ending with 1932-33 instead of a decennial average. The figure for North West Frontier Province is an estimate.

CASTOR, COFFEE, TEA, INDIGO AND RUBBER

(Figures in Thousands)

Crop	Area in 1931-32 (Acres)	Forecasted Yield in 1931-32 (Tons)	Value of Forecasted Yield in 1931-32 (Rs.)	Decennial Average of Forecasted Yield for the Period 1923-24 to 1932-33 (Tons)	Value of the Decennial Average of Yield for the Period 1923-24 to 1932-33 at 1931-32 Price (Rs.)
Castor	509	64	4,400	61	4,194
Coffee	81	8	10,900	7	9,056
Tea	772	162	158,310	163	156,738
Indigo	53	5	2,718	9	4,783
Rubber	125	4	2,714	5	3,163

APPENDIX C

ESTIMATE OF MILK YIELD

Received from Official Sources

Deputy-Director of Agriculture
Central Division, Bombay Presidency

	Yield per Year in Lbs.	
	Cow	*Buffalo*
Nasik District	463 to 540	1080 to 1144
East Khandesh District	463 to 576	1700 to 1800
West Khandesh District	463 to 576	1700 to 1800
Thana and Kolaba Districts	360	900 to 960

Livestock Expert to the Government of Bombay

Village buffaloes	1800 to 2000 lbs. per lactation
Village cows	400 to 800 ,, ,, ,,

Principal, Agricultural College Cawnpore

Kosi cows	2000 lbs. per year
Desi buffaloes	2308 ,, ,, ,,

Director of Agriculture, Punjab

Cows	1500 lbs. per year
Buffaloes	2500 ,, ,, ,,

Director of Agriculture, Assam

Cow	2 lbs. a day
Buffalo	4 to 5 ,, ,,

Received from Agents of the All India Village Industries Association

	Yield per Year in Lbs.	
	Cow	*Buffalo*
Mr. T. M. Kareal, Bulsar (Surat)	90	320
Mr. L. Sundarajaiyengar, Kuppam (S. India)	400	600
Mr. T. N. Ramum Menon, Anakkara (S. Malabar)	160	400
Mr. T. D. Pustake, Ujjain	180	810
Mr. Cunanidhi Mohanty, Balipada (Cuttack)	240	360
Mr. A. Chakravarty, Baradongal (Bengal)	820 to 984	—

	Yield per Year in Lbs.	
	Cow	*Buffalo*
Mr. T. A. Chettiar, Salem (Madras) .	800 to 1200	1150 to 1610
Mr. V. Vegnarian Shastry, Chinvada (Dist. Kistna)	520	480
Mr. K. G. Limaye, Pali Taluka . .	360	1500
Mr. G. M. Tagore, Bhadrak (Orissa) .	360	—
Mr. G. N. Tikekar, Nagpur . .	800 to 1000	1000 to 1200
Mr. N. P. Chitale, Yelmer-Mangewari .	800	2500
Mr. Achal Singh, Agra . .	640	1280

FROM VILLAGE INQUIRIES

		Milk Yield per Year in Lbs.	
Village	*District*	*Buffalo*	*Cow*
Gevanhal	Bijapur	656	460
Hesarur	Dharwar	2678	1010
Budhial	Dharwar	630	274
Shyam Darwa	Gorakhpur	796	180
Dhara Buzurg	Gorakhpur	360	90
Gopalpur	Bareilly	1216	270
Bhaunra	Bulandhsahr	908	684

APPENDIX D

STATISTICS OF MILK CONSUMPTION IN THE TOWNS FOR WHICH INFORMATION WAS OBTAINED

Town	Population (1931)	Average Daily Milk Consumption	Consumption per Head in Lbs.
Narayanganj	34,189	150 mds.	·36
Rajshahi	27,064	30 ,,	·09
Jhalakati	6,496	40 ,,	·50
Bahraich	33,783	50 ,,	·12
Hafiong	1,113	3 ,,	·22
Mayavaram	31,887	6000 seers	·38
Meerut	91,181	300 to 400 mds.	·27 to ·36
Bela Partabganj	9,437	20 mds.	·17
Baraut	9,390	20 ,,	·18
Yaval	12,751	200 seers	·03
Farrukhabad	56,503	50 mds.	·07
Balaghat	9,605	10 to 15 mds.	·09 to ·13
Bombay	1,161,383	300,000 lbs.	·26
Hooghly-Chinsurah	32,634	270 mds.	·68
Dholka	13,743	50 ,,	·30
Chandpur	14,000	22 ,,	·13
Dinajpur	19,156	24 ,,	·10
Balrampur	19,311	20 ,,	·09
Chirala	18,892	2400 seers	·25
Lucknow *	251,097	380 mds.	·12
Brindaban	17,148	50 ,,	·24
Deoband	22,126	25 ,,	·09
Narowal	7,095	8·1 ,,	·09
Daltonganj	9,817	7 ,,	·06
Hardwar	33,287	94·89 ,,	·23
Kyaiklat	10,658	350 lbs.	·03
Ahmedabad	313,789	3000 mds.	·78
Chingleput †	11,763	4·50 gallons	·36

* We have not taken the figures for Lucknow into our calculations, as the statistics refer only to milk brought from outside municipal limits.

† Gallons converted into lbs. at 9·5 lbs. to a gallon.

APPENDIX E

NUMBER OF CATTLE, SHEEP AND GOATS SLAUGHTERED IN THE TOWNS FOR WHICH INFORMATION WAS RECEIVED FOR BOTH THE YEARS 1931 AND 1934

Province and Name of Town	Population	1931		1934	
		Cattle	Goats and Sheep	Cattle	Goats and Sheep
Assam :					
Hafiong .	1,113	Nil	157	Nil	157
Bengal :					
Rishra .	26,868	1,850	7,600	2,050	7,600
Dacca . .	138,518	18,905	45,339	21,452	53,563
Narayanganj .	34,189	—	7,500	—	7,500
Bihar and Orissa:					
Madhupur .	8,965	1,593	3,581	3,675	4,097
Puri . .	37,568	Nil	5,880	Nil	6,980
Sasaram .	25,175	2,150	7,850	2,150	7,850
Daudnagar .	11,699	—	422	—	496
Bombay :					
Sholapur .	144,654	7,010	92,162	6,012	105,372
Nandurbar .	16,741	1,124	6,026	1,147	6,456
Ahmedabad .	313,789	13,007	128,059	9,731	146,569
Nasik . .	45,709	—	19,518	148	21,744
Poona City .	163,267	2,082	53,775	2,067	44,408
Barsi . .	27,610	1,376	2,522	1,434	9,179
Hubli . .	89,982	2,505	26,618	2,417	28,712
Bombay .	1,161,383	48,565	742,059	50,052	778,043
Jalgaon .	34,375	874	9,395	1,156	10,393
Wai . .	11,769	—	1,903	—	3,179
Belgaum .	41,204	906	8,908	375	10,317
Burma :					
Rangoon .	398,967	44,586	113,689	49,779	125,191
Maymyo .	16,586	2,289	1,886	4,175	4,784
Akyab .	38,094	2,195	728	3,482	733
Central Provinces :					
Umrer .	17,195	Nil	1,888	Nil	2,119
Mankpur .	17,565	2,798	1,948	3,069	1,847

Province and Name of Town	Population	1931		1934	
		Cattle	Goats and Sheep	Cattle	Goats and Sheep
Cent. Provinces—continued					
Anjangaon	11,597	2,583	4,000	702	1,592
Khamgaon	23,462	1,825	5,516	1,516	7,464
Seoni Malwa	6,410	—	193	—	248
Murtizapur	11,541	473	1,090	337	1,933
Arvi	16,293	2	3,495	—	2,955
Amroati	46,832	3,401	12,574	3,867	14,382
Kamptee	20,787	1,876	9,135	1,884	8,302
Akola	47,632	4,708	23,727	4,725	16,403
Warora	9,811	62	1,550	60	1,453
Drug	13,172	Nil	2,546	Nil	2,493
Khandwa	34,622	1,102	5,935	1,867	4,275
Amroati Camp	10,268	Nil	1,869	Nil	1,705
Ramtek	8,939	Nil	959	Nil	889
Nagpur	215,165	Nil	54,365	Nil	45,386
Delhi:					
Delhi	347,539	34,788	215,750	28,389	316,845
Madras:					
Tanjore	66,889	1,030	38,388	1,043	36,974
Madura	182,018	916	89,483	1,867	125,927
Madras	645,586	15,525	407,737	16,428	474,766
Tiruppur	10,851	Nil	10,987	Nil	14,707
Cochin	22,594	1,575	2,018	1,589	1,999
Chingleput	11,763	Nil	4,043	—	4,213
Tuticorin	60,395	560	13,897	570	19,269
Mangalore	66,757	1,293	10,150	1,288	13,756
Kodaikanal	6,525	1,744	2,665	1,413	1,722
Peddapuram	14,620	Nil	2,080	Nil	2,560
Hospet	21,673	1,056	7,830	695	8,052
Coimbatore	95,198	1,100	41,625	1,200	38,000
Adoni	35,635	1,899	16,288	1,709	20,877
Nagapatam	48,527	418	26,193	441	26,044
Bangalore Cant.	134,113	20,222	125,668	24,693	140,634
Punjab:					
Hansi	18,356	1,092	2,197	643	2,698
Panipat	32,915	3,320	2,865	3,534	3,519
Emenabad	7,329	Nil	1,937	Nil	3,388
Chiniot	25,841	560	10,058	302	11,193
Simla	18,144	4,246	22,669	4,108	22,017
Montgomery	26,164	Nil	13,794	Nil	13,402
Rohtak	35,235	2,401	647	248	299
Jullandur	74,295	1,900	34,269	3,817	44,535
Lahore	400,075	12,660	213,672	11,746	196,118

Province and Name of Town	Population	1931		1934	
		Cattle	Goats and Sheep	Cattle	Goats and Sheep
United Provinces :					
Lucknow .	251,097	10,032	147,366	9,775	193,705
Deoband .	22,126	2,119	967	2,228	979
Firozabad .	23,154	2,542	2,649	2,412	2,378
Chandpur .	13,999	Nil	1,400	Nil	1,500
Balrampur .	19,311	Nil	8,700	Nil	9,925
Cawnpore .	219,189	13,989	52,500	16,246	62,875
Almora .	8,715	122	2,018	93	2,389
Faridabad .	5,134	215	750	215	750
Nainital .	17,375	2,290	7,488	2,000	8,354
Unao . .	16,282	1,526	4,196	1,814	4,537
Meerut .	91,181	8,647	14,117	5,818	15,279
Hardwar .	33,287	1,051	2,956	947	4,029
Bareilly .	134,179	19,758	—	22,418	—
Agra . .	205,487	22,282	46,337	19,498	46,982
	6,769,066	362,727	3,024,729	366,516	3,393,965

APPENDIX F

NUMBER OF CATTLE, GOATS AND SHEEP SLAUGHTERED IN THE TOWNS FOR WHICH INFORMATION WAS RECEIVED ONLY FOR THE YEAR 1934

Province and Name of Town	Population	Cattle	Goats and Sheep
Ajmer	119,524	Nil	127,750
Assam :			
Jorhat	8,334	450	600
Bengal :			
Hooghly	32,634	645	5,004
Dinajpur	19,156	46	2,716
Darjeeling	19,903	6,589	9,996
Narayanganj	34,189	365	10,950
Kurseong	7,451	3,500	3,700
Baidyabati	18,486	1,800	1,440
Serampore	39,056	Nil	13,140
Berhampore	27,403	1,128	11,460
Chittagong	53,156	2,046	33,930
Bihar and Orissa :			
Dhanbad	12,973	Nil	5,475
Sambalpur	15,016	Nil	2,600
Gaya	88,005	6,619	22,233
Daltonganj	9,817	1,045	3,500
Samastipur	9,891	—	10,950
Arrah	48,922	2,190	32,850
Jamshedpur	57,454	4,980	40,568
Kindrapara	12,620	1,500	800
Lalgunj	9,192	750	7,500
Patna City	145,432	6,726	36,500
Sambalpur	15,016	Nil	3,290
Sahibganj	15,883	750	5,810
Bombay :			
Dholka	13,743	300	500
Ville Parle	9,578	Nil	1,000
Hyderabad	96,021	—	63,171
Igatpuri	9,627	334	5,370
Bassein	12,689	Nil	10,800
Yawal	12,751	3,650	7,300
Borsad	13,150	1,097	152
Kurla	30,311	7,586	13,752

Province and Name of Town	Population	Cattle	Goats and Sheep
Bombay—continued			
Godhra	35,110	6,370	4,957
Pandharpur	2,946	9,913	9,913
Shahada	7,762	598	4,519
Chopda	18,437	1,293	3,713
Indapur	4,031	300	1,200
Jacobabad	15,818	20,051	19,617
Erandol	12,253	1,364	2,734
Jambusar	11,660	Nil	1,410
Ahmadnagar	41,890	12,920	11,566
Baramati	10,447	1,718	4,130
Ratnagiri	17,312	Nil	3,500
Ghotgi	4,638	40	1,396
Guledgud	16,756	Nil	2,855
Bijapur	39,747	1,100	10,155
Karachi	247,058	9,156	209,709
Surat	98,655	2,980	96,910
Burma:			
Manjhand	2,746	—	1,082
Allanmyo	12,511	2,038	270
Kyaiklat	10,658	Nil	354
Pynimana	17,656	1,824	3,129
Sandoway	4,070	462	—
Zigon	6,338	634	74
Shwebo	11,286	372	407
Syriam	15,070	790	1,977
Central Provinces:			
Gondia	14,957	2,467	5,434
Chanda	28,138	68	4,084
Betul	9,614	Nil	2,168
Wun	12,597	23	1,873
Balaghat	9,605	—	2,900
Basim	14,409	1,321	2,849
Katol	10,900	—	287
Chindwara	17,080	1,330	3,399
Ellichpur (civil)	9,799	897	4,465
Mehkar	7,009	758	558
Bhandara	16,738	Nil	5,847
Anjangaon	11,597	702	1,592
Seoni	16,081	1,083	2,631
Wardha	19,571	Nil	7,187
Khandwa	34,622	2,311	5,187
Madras:			
Rajahmundry	63,526	4,652	13,455
Kurnool	35,314	2,108	24,730
Erode	33,672	1,132	26,850
Saidapet	33,037	Nil	25,920
Bezwada	60,427	1,380	45,154

Province and Name of Town	Population	Cattle	Goats and Sheep
Madras—continued			
Calicut	99,273	3,541	18,320
Chirala	18,892	Nil	4,745
Cannanore	34,236	1,460	8,736
Tellicherry	30,349	375	2,751
Cuddapah	22,602	730	14,600
Chidambaram	25,084	—	3,600
Mayavaram	31,887	—	6,120
Caddalore	59,057	—	13,500
Proddatur	20,174	—	11,950
Tirupati	17,434	—	10,220
Srivilliputtur	32,385	—	2,500
Sivakasi	15,212	—	1,320
Ootacamund	24,701	4,338	20,460
Udmalpet	12,184	Nil	7,200
Pollachi	11,875	Nil	8,215
Walajapet	11,096	—	3,650
Tadpatri	12,620	Nil	7,286
Vellore	57,147	56,854	56,226
Nellore	45,885	309	15,914
North West Frontier Province:			
Baffa	7,527	1,032	274
Kohat	25,100	1,640	18,180
Tank	6,421	120	7,200
Punjab:			
Narowal	7,059	—	2,840
Mithankot	2,680	1,648	1,648
Pend Dadan Khan	9,832	394	3,876
Hazro	9,155	—	3,650
Khem Karan	6,898	—	2,081
Pathankote	9,763	305	6,482
Phillaur	5,168	505	2,909
Hoshiarpur	25,925	648	10,956
Lyallpur	42,922	19,417	3,935
United Provinces:			
Bela	9,437	575	7,572
Kunch	15,150	1,544	973
Azamgarh	18,047	938	10,870
Mau	12,797	Nil	2,103
Farrukhabad	56,503	3,138	11,983
Fyzabad	59,992	2,230	20,342
Nagina	25,427	3,074	1,347
Sitapur	24,720	1,043	5,220
Khurja	31,279	3,680	5,238
Mainpuri	14,928	—	3,375
Allahabad	173,895	11,076	52,421
	3,241,098	267,965	1,469,742

APPENDIX G

NAMES OF MUNICIPALITIES HAVING NO LICENSED SLAUGHTER-HOUSES

Name of Town	*Population*
Assam.	
Shillong	21,300
Sunamganj	5,326
Karimganj	5,691
Bengal:	
Birnagar	2,341
Sherpur	4,279
Cox's Bazar	5,018
Kumarkhali	3,362
Kamarhati	30,334
Kotchanpur	6,115
Rajbari	7,104
Pabna	21,904
Bombay:	
Kumta	10,919
Ghatkoper	8,179
Navalgund	6,203
Nandgaon	6,253
Ranpur	5,928
Bandra	40,649
Anand	11,660
Amalner	22,717
Junnar	8,421
Madras:	
Udmalpet	12,184
Punjab:	
Beri	7,877
Jagadhri	13,268
United Provinces:	
Baraut	9,390
	276,422

APPENDIX H

ESTIMATES OF THE AVERAGE LIFE OF CATTLE

FROM OFFICIAL SOURCES

Cow	*Buffalo*	*Source*
10–12 years	12–15 years	Superintendent, Civil Veterinary Department, North West Frontier Province
15–16 ,,	16–18 ,,	Director, Civil Veterinary Department, Bengal
9–10 ,,	9–10 ,,	Offg. Director of Veterinary Services, Burma
About 15 years	About 15 years	Superintendent, Civil Veterinary Department, Assam
3–9 years		Offg. Superintendent, Govt. Cattle Farm, Hissar

APPENDIX I

STATISTICS OF VALUE OF HOME CONSUMPTION OF FOREST PRODUCE IN INDIA BY PROVINCE (in Rs.)

	Timber	Fuel	Bamboos	Resin	Cutch	Lac	Matches	Paper	Fodder	Sandal
Madras . .	904,827	728,520	557,267	27	10,960	880	14,147	—	630,560	672,800
Bombay . .	4,529,400	924,213	198,293	—	—	—	—	—	1,506,507	147,973
Bengal . . .	3,419,360	273,533	158,640	—	—	—	—	—	70,507	—
United Provinces .	2,965,693	218,387	96,747	157,000	493,533	—	50,667	121,233	452,453	—
Punjab . . .	400,000	866,667	17,333	30,667	—	—	—	—	1,333,333	—
Burma . . .	29,964,693	539,373	291,720	—	147,173	429,267	—	—	226,587	—
Bihar and Orissa .	1,251,280	108,813	56,880	—	—	11,680	—	24,000	130,000	—
Central Provinces .	1,741,267	485,427	312,813	—	20,000	15,973	—	—	1,850,133	—
Assam . . .	1,627,640	82,093	23,497	—	—	189,333	—	—	—	—
North-West Frontier Province . .	169,267	100,973	—	17,920	—	—	—	—	5,773	—
Coorg . . .	108,893	6,733	2,667	—	—	—	—	—	—	281,947
Other Areas . .	498,786	86,814	—	—	—	—	—	—	—	—

APPENDIX J

STATISTICS OF INCOME ASSESSED AND ESTIMATED NO. OF HINDU UNDIVIDED FAMILIES, UNREGISTERED FIRMS AND ASSOCIATIONS OF INDIVIDUALS SUBJECT TO TAX

Income Grade (Rs.)	Income of			Estimated Income per Assessee (Rs.)	Estimated Number of Assessees		
	Hindu Undivided Families	Unregistered Firms (Rs.)	Associations of Individuals		Hindu Undivided Families	Unregistered Firms	Associations of Individuals
1,000 to 1,499	46,677,236	9,417,661	1,813,580	1,250	37,342	7,534	1,451
1,500 ,, 1,999	39,168,550	9,181,487	1,403,403	1,750	22,382	5,247	802
2,000 ,, 2,499	25,795,426	6,983,321	960,383	2,250	11,465	3,104	427
2,500 ,, 2,999	18,340,622	5,288,803	564,111	2,750	6,669	1,923	205
3,000 ,, 3,499	18,247,430	5,437,791	598,827	3,250	5,615	1,673	184
3,500 ,, 4,999	41,867,879	13,548,660	1,249,231	4,250	9,851	3,188	294
5,000 ,, 7,499	43,336,998	15,517,967	1,348,156	6,250	6,939	2,483	216
7,500 ,, 9,999	27,646,352	12,043,612	1,082,311	8,750	3,160	1,373	124
10,000 ,, 12,499	17,349,158	8,249,329	639,647	11,250	1,542	733	57
12,500 ,, 14,999	11,715,779	5,776,797	458,564	13,750	852	420	33
15,000 ,, 19,999	15,991,094	8,140,813	769,848	17,500	914	465	44
20,000 ,, 24,999	9,557,824	4,734,857	518,883	22,500	425	210	23
25,000 ,, 29,999	7,812,383	2,993,398	169,641	27,500	284	109	6
30,000 and above	26,071,806	17,684,205	3,215,949	——	199	258	55

APPENDIX K

THE INCOME OF BURMA

THE income of Burma is calculated on the same lines as that of British India. The following table gives the occupational distribution of the population of Burma :

TABLE I

(Figures in Thousands)

Description	Principal Earners			Working Dependants			Subsidiary Workers		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Pasture and agriculture .	2432	907	3339	217	170	387	98	20	118
Fishing and hunting . .	48	6	54	3	1	4	13	1	14
Minerals . .	27	2	29	1	1	2	2	—	2
Industry . .	305	127	432	18	161	179	51	57	108
Transport .	185	9	194	10	3	13	48	1	49
Trade . .	244	201	445	9	71	80	31	18	49
Public Administration and force . .	65	—	65	—	—	—	5	—	5
Professions and Liberal arts .	55	12	67	94	10	104	6	—	6
Living on income	5	2	7	—	—	—	1	—	1
Domestic service	32	7	39	1	2	3	—	—	—
Unproductive .	—	—	—	17	4	21	—	—	—
Grand Total .	3398	1273	4671	370	423	793	255	97	352

This table does not give the number of actual workers, as allowance has to be made for the unemployables and the unemployed. Calculating on the same basis as we did for British India, we get 4·4 millions as the number of actual workers in Burma. The principal actual workers of the province may be classified into urban and rural earners as follows :

TABLE II

PRINCIPAL ACTUAL WORKERS

(Figures in Thousands)

	Urban Workers	Rural Workers	Total
Pasture and agriculture, Fishing and hunting, Minerals	72	3179	3251
Industry	109	285	394
Transport	88	96	184
Trade	149	274	423
Public force and administration	34	31	65
Professions and liberal arts	25	39	64
Domestic service	15	22	37
Unproductive	—	—	—
Total	492	3926	4418

Of these, the incomes of 32·5 lakhs of persons are to be obtained by the *inventory method* or by estimation of the value of their output; while that of the remaining 11·7 lakhs of persons is to be calculated on the *income method.*

The value of the agricultural output of the province for the year 1931–32 was Rs. 526 millions. Details are as under:

TABLE III

AGRICULTURE

(Figures in Thousands)

	Area	Forecasted Yield in 1931–32	Value (Rs.)
Rice (tons)	12,517	4,202	300,216
Jowar ,,	652	92	5,450
Gram ,,	200	40	1,906
Maize ,,	221	34	694
Groundnut ,,	408	125	12,800
Seasamum ,,	1,308	30	4,544
Cotton ,,	225	34	3,715
Tobacco ,,	87	39	14,241
	15,618		343,566
Other crops	2,304		182,894
Total	17,922		526,460

From this figure, Rs. 94·8 millions have to be deducted for cost of producing this output on account of seed, wastage, annual cost of agricultural implements and upkeep of draught cattle. The net value of the province's agricultural output is therefore Rs. 431·7 millions.

It is now necessary to calculate the value of the live-stock products of Burma. There were in the province 1,484,000 cows, 413,000 buffaloes, 278,000 goats, and 65,000 sheep in the year 1931–32. Assuming that the conclusions regarding milk yield, slaughter, and other minor products which we have arrived at for the whole of British India can be applied *pro rata* also to the livestock of Burma, we get the following statistics of yield of live-stock products :

TABLE IV

(in Thousands of Rs.)

Milk	66,280
Meat	1,770
Horns, tips, etc. . . .	153
Hides and skins . . .	340
Total	68,543

The figures for the output of milk have been calculated after deducting money expenses of upkeep at Rs. 20–22 per milk-yielding animal. The figure of Rs. 68·5 millions therefore represents the net value of the livestock products of Burma.

The total value of minerals mined in Burma comes to Rs. 62·8 millions ; and that of forest produce to Rs. 35·9 millions. The value of output of those engaged in fishing and hunting is estimated at Rs. 11·2 millions. The total value of the aggregate output of the 32·5 lakhs of persons who are engaged in agricultural and allied occupations thus comes to Rs. 610·1 millions.

The total of incomes assessed to income-tax in 1932–33 and therefore representing incomes accruing in 1931–32 comes to Rs. 232 millions. Of this, Rs. 50 millions have to be deducted on account of the profits of mining

companies and the salaries paid by them, as this has already been counted in the value of mineral output. That leaves Rs. 182 millions as the amount of income assessed to income-tax which has to be added to our figures.

The total number of assessees is 39,640, of whom 18,924 are non-salaried assessees. The non-salaried assessees are not identical with individuals, as some of them consist of companies, registered firms, and associations of individuals. Proceeding on the same basis as is employed in our calculations for British India, we arrive at 44,254 as the actual number of assessees, salaried and non-salaried ; this number being distributed as under :

Government servants . . .	8,720
Servants of local authorities . .	1,456
Industry	16,228
Trade	16,228
Professions and Liberal Arts . .	1,622

We can now state the number of non-agricultural earners whose incomes we have to calculate :

TABLE V

(Figures in Thousands)

Occupation	Estimated No. of Income-tax Payers	Total Earners in each Occupation	Estimated No. of Earners with Income Below Rs. 1000
Industry	16	432	416
Services of Government, Railways, Posts and Telegraphs . .	10	65	55
Trade and other Transport . .	16	639	623
Professions and Liberal Arts .	2	67	65
Domestic service . . .	Nil	39	39

Of the industrial workers, 90,812 were engaged in organized industry ; their average wage has been calculated at Rs. 350 on the basis of the data we collected for Burma in the course of our wage-census inquiry, and this figure also approximates to the average wage figure yielded by an analysis of workmen's compensation statistics for that province. For calculating the wages of

the remaining urban industrial workers, as also of the rural industrial workers, we have adopted the British India estimates of Rs. 192 and Rs. 120 respectively. The total income of industrial workers other than those paying income-tax comes on this basis to Rs. 68·8 millions.

The incomes of workers engaged in transport, trade and domestic service have all been calculated by applying the estimates we have made for British India: and come to Rs. 284·2, Rs. 946·3, and Rs. 43·8 lakhs respectively. As for the incomes of those engaged in Government service, railways and the service of local authorities, we find that the total salary bill of the two former bodies for Burma comes to Rs. 558 lakhs, while that for the local authorities can be estimated at Rs. 28·6 lakhs; thus making a total of Rs. 587 lakhs. This figure includes Rs. 397 lakhs of salaries which are assessed to income-tax and which have therefore been already included in our calculations. Deducting this item, the net addition on this account comes to Rs. 190 lakhs.

It is necessary to add to the total reached, so far, the sum of Rs. 302·8 lakhs on account of the imputed income of 212,000 subsidiary workers and of 379,000 working dependants who are engaged in non-agricultural occupations. There is, in addition, the value of house property in Burma, which can be estimated at Rs. 454 lakhs on the same method as has been employed for British India. From the sum of these figures, we have to deduct Rs. 1075 lakhs which constituted the favourable balance of trade for Burma in its trade with British India.

The total income of Burma thus comes to Rs. 990·5 millions for the year 1931–32. Details are as under:

	(*in Thousands of Rs.*)
Agriculture	431,698
Livestock	68,543
Fishing and Hunting	11,200
Forest produce	35,900
Minerals	62,797
Incomes assessed to Income-tax	182,000

	(*in Thousands of Rs.*)
Income not assessed to Income-tax of workers engaged in :—	
Industry	80,137
Service of State	19,000
Trade	103,131
Professions and Liberal Arts . . .	21,693
Transport	32,064
Domestic service	4,483
Incomes from House Property . .	45,396
Deduct favourable balance of trade with India	107,535
Grand Total . . .	990,507

This figure is perhaps subject to a larger margin of error than that for British India ; it is, however, difficult to calculate with precision the magnitude of this error ; we may tentatively place it at ±10 per cent. The *per capita* income of the people of Burma thus comes to Rs. 67·5, subject to an error of ±10 per cent. This figure may be compared with the Rs. 62 which we have calculated to be the *per capita* income of British India including Burma.

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THE END

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